**Historic, archived document**

Do not assume content reflects current scientific knowledge, policies, or practices.

UNITED STATES DEPARTMENT OF AGRICULTURE — Radio Service — OFFICE OF INFORMATION

PROGRAM U. S. RADIO FARM SCHOOL. First RELEASE Wed. Mar. 2.

NOT FOR PUBLICATION

1.9
Fa3Fs

SHORT COURSE: Incubation

LECTURE NO. 6: Testing the Eggs.

ANNOUNCEMENT: The U. S. Radio Farm School starts now with the Schoolmaster at his desk ready for action. His subject for the first lesson is Testing Eggs.

* * * * * *

(The characters speaking during this lecture are: The Professor himself; and Doyle and Johnson, members of the class.)

* * * * * *

DOYLE: What's the box on the Prof's desk there?

JOHNSON: Don't you know what that is? -- That's an egg tester.

DOYLE: That old box? -- If it is, he must have made it himself.

JOHNSON: Sure -- I guess he did. They're easy to make -- take a look at it--

You see you just set it on end -- There's room enough inside for a lamp ---

Yes, here it is -- he has an electric light in there --- I should have thought about that -- If he had used a kerosene or gas lamp, he would have made a hole at the top end of the box here --- so the heat from the lamp chimney wouldn't set fire to the box. And see here's the hole in the side of the box just at the level of the lamp. You see it's just a little smaller than an egg.

DOYLE: Well, I hope he tests the eggs and not us. That ----------

JOHNSON: Sh-h-h-h! Here he comes. ------

DOYLE: What's he got there ----

JOHNSON: I guess it must be eggs.

DOYLE: I guess we had better fade away, Johnson or he may call on us ----

THE PROFESSOR: Wait a minute, Johnson!

(Four or five raps -- as if on desk)

The class will be in order!

Johnson do you test your hatching eggs?

JOHNSON: Yes, sir!

THE PROFESSOR: That's good. Testing is important both from the standpoint of getting a successful hatch and from that of economy -- When do you test your eggs?

JOHNSON: I test them the first time a few days after I've put them in the incubator.

THE PROFESSOR: What! --- You are just like most people -- You think that testing eggs refers merely to testing the eggs while they are being incubated. You overlook the importance of testing them before they are put in the incubator.

All you poultrymen should realize --- the more carefully you test the eggs before you place them in the incubator, the bigger chance you have to get good hatch ----

JOHNSON: But Professor -- I buy my eggs for hatching -- They ----

THE PROFESSOR: Then it's doubly important for you to test them --- because you don't know their history ----

There are many eggs which may look all right on the surface. But sometimes when you test them, you find they are unfit for hatching purposes. Some of them may be slightly cracked -- a condition known as "hair split". Often such eggs don't hatch.

Then you frequently find several eggs in a lot that have shells which appear very spotted when seen before the candle. That spotted appearance is due to the uneven deposition of calcium. Observation has shown that many of these eggs are infertile or, if they are fertile, they seldom hatch.

And, of course, you can readily determine the age of eggs by examining the size of the air cell. ------

I have a number of eggs here. Some are fresh and some are old. I also have secured some eggs in different stages of incubation.----------

Godfrey --- turn off the light ---- Smith, pull down that blind there. Now we'll turn on the light here in our tester.

I'll hold this egg before this hole in the box through which the light is streaming --- Johnson -- How big is the air cell in this egg?

JOHNSON: The base of the air cell is about as wide as a dime.

THE PROFESSOR: When it's that size, you can bank on it being a strictly fres egg. Let's try another. The older the egg the larger the air cell --- How about this one?

JOHNSON: The base of that air cell is wider than a quarter.

THE PROFESSOR: Yes. It's either several weeks old or it has been held at too high a temperature. Eggs should not be over 10 days old when you put them in the incubator. At that age the air cell should not be much wider than a quarter.

Well, let's say we've tested the setting of eggs and placed them in the incubator. During incubation, you should test them at least twice more. Test on the seventh and the fourteenth day. After the first of these two incubator tests, you should remove all infertile eggs and those with dead embryo The embryos that die after the first test can be removed at the second test. But don't leave eggs with dead germs in the incubator. They soon decay and give off a bad odor. Many operators of mammoth incubators make one test about the fourteenth day, removing all infertile eggs and dead embryos at that time.

JOHNSON: Professor --- Would it be all right to test on the fifth day instead of the seventh?

THE PROFESSOR: You might test white eggs that soon -- but the development in eggs having brown shells often can not be seen by the use of an ordinary egg tester until the seventh day ---- But let's test a few eggs --------

Doyle! ------- Take these eggs -- Hold them one at a time before the candle and tell us what you see ------

No, Doyle --- Not that way. Test them with the big end up ---- so you can see the size of the air cell as well as the condition of the embryo. ------All right, how does that one look?

DOYLE: It looks perfectly clear to me.

THE PROFESSOR: It must be infertile then ----- Try another one. ---- What do you see?

DOYLE: There's a small, dark spot in this one.

THE PROFESSOR: That must be the embryo --- Do you see any thing else?

DOYLE: Yes. There's a lot of little blood vessels reaching out in all directions.

THE PROFESSOR: Then the embryo must be living. Now try another egg. Is that just like the other one?

DOYLE: No. There's a sort of circle of blood toward the edges of the yolk.

THE PROFESSOR: That's the "blood ring". That's a sign the developing chicken in that egg is dead. Some eggs show only a streak of blood in such cases.

When eggs are tested on the fourteenth day of incubation, those with dead germs show only partial development and lack the clear, distinct outline which those containing strong, living embryos show. The living ones are dark and well filled on the fourteenth day -------

All right, Godfrey, -- Turn on the lights ---

Next week, I want you all to come prepared to answer questions in regard to hatching turkeys, ducks, and gees. There are interesting difference between them and chickens.

* * * ** * * **

UNITED STATES DEPARTMENT OF AGRICULTURE — Radio Service — OFFICE OF INFORMATION

PROGRAM U. S. RADIO FARM SCHOOL Second RELEASE Wed. Mar. 2.

NOT FOR PUBLICATION

SHORT COURSE: Common Poultry Diseases and Worms

LECTURE No. 6: Coccidiosis.

ANNOUNCEMENT: The next radio lesson in the U. S. Farm School this evening is a discussion of one of the most common and destructive of poultry diseases. This ailment of young chicks is just as bad as it sounds.. Perhaps you've heard of coc-cid-i-o-sis. Go ahead Professor and tell them all about it.

* * * * * *

(The characters speaking during this lecture are: The Doctor himself; Martin and Williams, members of the class.)

* * * * * * *

(Two sharp raps -- as if on desk)

THE DOCTOR: Order in the classroom! ---------

This should be a warning to you --- There may be trouble ahead for those chicks you now plan to hatch ------

Cocidiosis seems to be getting more common each year. And it often means sudden death to a large number of chicks ---- when it gets in a flock. Losses may reach to 75 per cent of the brood.

It's a poultry plague with a long name -- But it makes short work of chicks from 2 to 10 weeks old.

And it may even occasionally take off some of the older birds.

The causes of some of the poultry plagues we've been talking about in this course have as yet escaped detection. But in the case of coccidiosis we know the criminal. It's a microscopic oval parasite which may infest the intestines of all domestic birds. The infested birds spread the eggs of this minute parasite around the poultry yards. After several days of incubation on the ground, the young parasites develop to a stage where they can establish themselves if they can get in the intestines of a bird. Along come the healthy chicks. They swallow these developing parasites with food or gravel. Then the death-dealing cycle starts again.

Now then, Martin, in troubles of this kind, what's the best thing to do?

MARTIN: I find I get the best results by keeping the chicks where they can't pick up the parasites. I raise the young chickens in separate pens from the old stock. New chicks on new ground, is my rule.

THE DOCTOR: Yes. And a good rule it is, too. It's always best to raise chicks or poults in brooders or on new uninfested ground. Do you do that, Williams?

WILLIAMS: I haven't been doing it.

THE DOCTOR: Does coccidiosis ever get in your flock?

WILLIAMS: Yes, sir. Some of my chicks had it last year.

THE DOCTOR: What did you do?

WILLIAMS: First, I cleaned and disinfected the brooder coops and houses with a 5 per cent cresol compound solution.

THE DOCTOR: That's right. A 5 per cent solution is none too strong. What else did you do?

WILLIAMS: I scraped and spaded the chicken runs to a depth of 4 or 5 inches. Then I segregated the young birds from contact with the hens or flying birds. I added one-third teaspoonful of permanganate of potash and one-third teaspoonful of catechu to every gallon of drinking water I set before the chickens.

THE DOCTOR: That's a pretty good sanitary program. If you include in that the raising of the new stock on fresh ground, you can reduce the danger of spreading the disease among the young ones with which it goes hardest.

And another thing --- You might feed your chickens sour milk or buttermilk each day. That has been found to help considerably in combating the disease.------

WILLIAMS: Doctor, I bought a hen from a flock which I afterward found had a number of chickens in it that were dying off from coccidiosis. I've always thought that my chicks picked up the germs from that hen ------- but she never did show any signs of the disease.

THE DOCTOR: That's perfectly possible, Apparently healthy hens sometimes harbor the disease. That makes them all the more dangerous-- because they are usually never suspected. But you should never buy a bird except from a flock you know to be healthy. That is, as far as it is possible to know it.

MARTIN: Do ducks and geese get coccidiosis?

THE DOCTOR: Yes. Practically all domestic fowl are susceptible. Ducks and geese, however, are probably less susceptible than chickens and turkeys.

Pigeons are especially susceptible. They get the disease at any age, with a high death rate.

MARTIN: What are the symptoms of coccidiosis, Doctor?

THE DOCTOR: Well, the young birds appear sleepy. They stand about with their heads drawn in. Their feathers are often ruffled and their wings drooping. They are indifferent to their surroundings and have no desire for food. There is a profuse watery blood-stained intestinal discharge. The chicks lose weight fast. They get very weak and thin. Death comes in 1 or 2 days.

Goslings affected with coccidiosis acquire a staggering gait. Often, they get so weak, they fall over on their backs with their feet wide apart. When you set them on their feet again, they may stagger a few steps --- but fall -- and again get over on their backs and struggle.

Older fowls have considerable resistance to the parasites which produce this disease. With them it most generally takes a chronic form. Older fowls affected with the disease may show leg weakness and paralysis -----

But losses of the older birds from coccidiosis are comparatively rare. It's the young chickens from two to ten weeks old which are most frequently taken.

WILLIAMS: How about the chicks a week old and younger? Don't they have coccidiosis?

THE DOCTOR: , Well, as I indicated before, coccidiosis usually appears after the chisk are from two to ten weeks old.

However, there is another disease which occurs during the first few days of the chick's life, which is sometimes mistaken for coccidiosis. But we will talk about that next week.

UNITED STATES DEPARTMENT OF AGRICULTURE — Radio Service — OFFICE OF INFORMATION

PROGRAM U. S. RADIO FARM SCHOOL. FIRST RELEASE Fri. March 4.

(NOT FOR PUBLICATION)

SHORT COURSE: Dairy Farm Engineering.

LECTURE No. 6: The Safe-Keeper Bull Pen.

ANNOUNCEMENT: Again this evening the Dairy Farm School comes to us from the U S Department of Agriculture. Nearly every day we hear or read about a dairyman, somewhere being killed by a "Gentle Bull". The radio school master is going to discuss, for the next few minutes, the "Safe-Keeper Bull Pen".

(The characters speaking during this lecture are: The Professor himself; and Jones and Cobb, members of the class.)

* * * * * * *

THE PROFESSOR: Bailey! -- Keep away from that gate! ---
That bull might come in here any moment --- Can't you see the door into the yard there is open ----
All of you -- Just stop there at the outside door. You know, dairy bulls have a lot of strength---and very nervous temperaments -- There's no telling what he might do -- if he sees this crowd --

JONES: Professor, this is supposed to be a safe keeper bull pen.

THE PROFESSOR: Yes, it is --- but that's no reason you shouldn't use a little discretion ---- It's safe, if you operate it safely ---
Just a moment, men. Here's a good safety feature. You see that door between the pen and the exercise yard is hung on a track with guides at the bottom to keep it from swinging in --- You see these ropes and pulleys connected with the door -- I can just stand here in the feed alley, pull this rope and close the door --- I don't have to enter the pen at all. (Sound as of sliding barn door closing may be introduced here)
There now --- We've shut the bull out in the yard -- It's safe for you to come in here, now --- A few of you at a time, please -----

COBB: Is that bull as dangerous as all that --- I understood he was pretty gentle.

THE PROFESSOR: Maybe, so, Cobb. But you don't know how long he will stay gentle --- Never trust a bull ----

But with a pen like this, you can keep a proved bull that you would otherwise have to get rid of because he had become unruly. And you can also give the bull better care ---

JONES: What are the dimensions of this stable, Professor?

THE PROFESSOR: The entire stable is twelve by eighteen feet. The bull pen there is eleven by twelve feet in size. And this feeding alley here is five by eleven.

There are two doors -- the one leading in here to the feeding alley and that sliding door leading from the pen into the yard. That door into the yard is four feet wide.----There's a little gate from the alley into the pen.

You see there are four single sash windows with 9 x 12 inch panes --- They're hinged -- and the bottom of them is at least four feet above the floor -- And you'll notice that two of the windows are in the south side of the stable --

In warm climates, they just leave the south side open -- but in that case they have to build a heavy plank fence and gate in place of the wall.-------

---- Thompson -- Open that little gate between the alley and pen --- We'll have more room in the pen there. That gate is a great convenience for the bullkeeper --

JONES: These iron pipes placed vertically this way certainly make a good strong partition to fence the bull off from the feeding alley ---

THE PROFESSOR: Yes, they do, Jones -- But you can use good stout planks too, nailing them up horizontally instead of vertically.

I want to call your attention to the stanchion and manger there in the corner of the pen next to the feed alley -- You see you can put the feed in the manger without entering the pen and that rigid stanchion is wide enough so the bull can easily reach through to get his feed ----

And notice one side is a movable bar hinged at the bottom and with a good latch at the top. With that rope to the latch, you can fasten the bull in from the feeding alley.

COBB: Professor, where could we get plans for a bull pen like this?

THE PROFESSOR: Why, Cobb, just write to the Bureau of Dairy Industry of the U.S. Department of Agriculture. They'll send you complete plans and specifications.

JONES: Couldn't you have a pen like this in one corner of the main cow barn -- instead of as a separate stable?

THE PROFESSOR: Certainly, a good many dairymen do that.--------

But there are several features about this stable you all haven't noticed yet.

At one end of your feed alley, you notice there's a grain bin. And there at the other end, there's a wall cabinet and a hydrant. That hydrant is mighty convenient -- where you have water pressure. But when you put it in, be sure and locate the stop-and-waste cock below the frost line.

And I might add, when you are building your stable, you should have a good substantial concrete foundation that also goes down below the frost line.

COBB: This is a good concrete floor, Professor. Whoever laid it did a good job roughening the surface so the bull won't slip. How much does it slope?

THE PROFESSOR: This floor has a pitch of one-fourth inch to the foot sloping to that bell trap in the corner. The trap leads to a 4 inch tile drain. --

Alright now, men, before we go out to look at the exercise yard --- I want you to get in your mind some of the essential features --- Jones, tell us what you consider a good exercise yard?

JONES: Well, it should be large, well drained, and free from stones. It should have a good strong fence around it -- but one the bull could see through. It should be 5 or 6 feet high.

THE PROFESSOR: Yes. Ordinarily gates form a weak place in the fence. What would you do about them?

JONES: I wouldn't have them --- except where they are absolutely necessary. I'd build them strong, hand them on heavy hinges, and equip them with reliable locks and latches.

THE PROFESSOR: What do you mean, you would "build them strong"?

JONES: Well, I'd build them of the best material, and I'd set up a post against the free end of the gate -- so the gate wouldn't open outward.

THE PROFESSOR: That's a good idea. Cobb, what features are you going to look for in the yard?

COBB: I'm going to see whether the breeding rack is conveniently located in relation to the yard. And I'm going to see whether there's a tank in one corner of the yard -- so the bull can take a drink when he wants it.

THE PROFESSOR: All right --- Let's all see now whether the yard connected with this stable meets those requirements. We might pick up some ideas which we can use in connection with our lesson on cow yards and manure sheds next week.

JONES: Professor, my cow lots are already laid out.

THE PROFESSOR: Well, Jones. You may get some suggestions for rearranging them--

All right, let's go!

###

UNITED STATES DEPARTMENT OF AGRICULTURE — Radio Service — OFFICE OF INFORMATION

PROGRAM U. S. RADIO FARM SCHOOL Second RELEASE Fri. Mar. 4.

SHORT COURSE: Breeding Dairy Cattle

LECTURE NO.6: Selection of the Sire.

NOT FOR PUBLICATION

ANNOUNCEMENT: "Selection of the Sire" that's the second topic this evening on the Dairy Farm School which comes to us from the U. S. Department of Agriculture. All new comers should get busy and enroll in order to get copies of the 24 booklets containing the 216 printed radio lessons. We'll go ahead now with the lesson.

* * * * * * *

(The characters speaking during this lecture are: The Professor himself; Holt and Brammel, members of the class.)

* * * * * * *

(Four or five raps -- as if on desk)

THE PROFESSOR: Attention in the class! ---

Today we have a problem that needs much attention -- from most of you dairymen --- and from all of you breeders of dairy cattle. It's a problem as old as constructive breeding itself -- but it is one of your biggest problems today --- Brammell!

BRAMMEL: Yes, sir ------

THE PROFESSOR: What would you say is the best way to increase milk production

BRAMMELL: Add high-producing cows to the herd.

THE PROFESSOR: Well --- of course ---- but how would you go about it?

BRAMMELL: I'd buy cows with high records of production ------

THE PROFESSOR: Just a moment, Brammell. Unless you have unlimited financial resources, there is slight chance of increasing -- or even maintaining good average production - by depending entirely on buying cows.

Last week I pointed out to you, the importance of the bull. I want to emphasize right here -- that continued progress and success in the dairy business depend largely on the selection of the herd bull.

The selection of the bull may seem merely one insignificant item in your program,------

But men have reached a high rank as breeders of dairy cattle through the performance of the offspring of a single sire. Men have also seen the fame of their herd dwindle when the great bull and his offspring were no longer in the herd -- and when their second choice of bull was not as wise or as lucky as the first.

Now, Brammell, how would you select a bull for your herd?

BRAMMELL: I'd select him according to type --- based on his conformation or his record in the show ring.

THE PROFESSOR: If you wanted him just for type -- that might be all right -- but we are now considering the selection of the bull from the dairyman's standpoint -- for milk and butter fat production ---

Holt --- How would you select a bull?

HOLT: I'd pick him by his pedigree --- one that shows his breeding and the performance of his ancestors for several generations.

THE PROFESSOR: Yes. Such records at least suggests the possibility that the bull's offspring will show similar production. Then, the pedigree also furnishes good advertising material if the records are large. Selection by pedigree is the method universally adopted by breeders who practice line breeding ---- (As if interrupted) What is it, Brammell?

BRAMMELL: Pedigrees don't always tell a true story of a bull's value. Sometimes they build up a pedigree which is all right as to the ability of the ancestors -- but it exaggerates the real value of the bull.

THE PROFESSOR: There's something in what you say. For that reason, it is well to give particular emphasis to the records given in the first two or three generations. Sometimes, the records of individuals are included which have but a slight relationship to the bull being considered.

But for those with only a limited knowledge of the better strains of the breed, and those unable to travel about in search of a sire, pedigree selection is the best method to follow.

However, it is well to insist on a bull from a tested cow, with a yearly or a ten-month record. If the young bull has any sisters in milk, their records should also be considered. In fact, you should consider the performance records of all the females and the offspring of the male ancestor --- giving greater weight, of course, to those in the first and second generations. The contribution of a distant ancestor to the make-up of any individual is very slight and his influence in heredity becomes less with each succeeding generation. (As if interrupted)----- Well, Brammell?

BRAMMELL: Bulls and cows of good breed type bring better prices when put up for sale than those with poor conformation. ------- It looks like to me

that it pays to select them according to type, too.

THE PROFESSOR: Yes, that's true. The market preference for animals of good breed type is reason enough for a thorough study of the conformation of a bull and the type of his mother, half-sisters, and other close kin, as well as close inspection of his pedigree.

If he is a young animal, a visit to the farm of the seller will give you a chance to see the animal's father and mother as well as others members of his family. They will give you a fair indication of what to expect in the offspring--- allowing, of course, for the type of females to expect in the offspring --- allowing, of course, for the type of females to which you mate the new bull. --- But we will have more to say about type next week.

Unfortunately, bulls whose pedigrees show high production records and sons of high-producing mothers sometimes fail to transmit production. And show animals frequently produce sons and daughters of only medium ability as producers.

Only one way remains to select a herd sire with the assurance that high production will be transmitted to his offspring. That is by the use of a proved bull --- a bull having enough daughters in milk to give a true measure of his ability. Comparison of the daughters with their mothers is the basis on which to judge the bull.

If the daughters are uniformly better in type and excel their mothers in production of milk and butterfat, then their sire may be safely used as a herd leader -------(As if interrupted) Yes --- What is it, Holt?

HOLT: That takes too long to find out. By the time enough daughters have been tested to prove the bull's ability, he is at least five years old. Likely as not, the bull has passed through the slaughter house by that time or been sold where you can't get to him.

THE PROFESSOR: Yes. That's the principal difficulty in obtaining proved bulls. It takes careful study of records and some correspondence and travel to find a proved bull. But if you have developed your herd to a high point of efficiency, the time and expense it takes to locate the proved bull is an excellent investment.

And remember, failure to choose a sire wisely, may undo the constructive work of many years.

UNITED STATES DEPARTMENT OF AGRICULTURE
Radio Service
OFFICE OF INFORMATION

PROGRAM..... U. S. RADIO FARM SCHOOL First RELEASE Mon., Mar. 7.

1.9
9n3F5

NOT FOR PUBLICATION

SHORT COURSE: Meat Production and Use.

LECTURE No. 7: Lamb and Mutton.

ANNOUNCEMENT: For the last 6 weeks on the U.S. Farm School, we've been discussing Meat Production and Use -- a subject of interest to town people as well as livestock men. For the next few minutes our radio school master is going to chat with you about Lamb and Mutton.

(The characters speaking during this lecture are: The Professor himself; and Boyd and Drake, members of the class.)

**********

THE PROFESSOR: Just a minute! -- Just a minute, Boyd! -- Give me time to get to my desk, will you ----

I'm glad to see members of the class taking so much interest, though -----

All right --- Now what is it? ---

BOYD: You were telling us last time about how to cook lamb and mutton -----

THE PROFESSOR: Yes.

BOYD: I don't like to eat mutton for several days straight -- When I kill a sheep for home eating, I like to string it along with other kinds of meats now and then. What's a good way to keep fresh lamb and mutton from spoiling?

THE PROFESSOR: That's not hard in dry, clear weather -- even in summer. Hang your leg of lamb or mutton on a sterilized hook where it will swing free in a current of air. It will keep in good condition for days that way.

BOYD: In the summer time, you'd have to screen it against flies.

THE PROFESSOR: Certainly. It should be screened completely ----- But don't let the screen touch the meat and don't let it interfere with the free circulation of the air. That dry film which forms on the surface of the meat is its protection against bacteria.

BOYD: Some people cook it first, don't they?

THE PROFESSOR: Yes. If you have a fairly cool storage place, you can stew it, braise it, or boil it and seal it down under its own fat and keep it for quite a while. You can do that with other meats, but the rather hard fat of lamb or mutton make it an especially satisfactory method for keeping fresh lamb or mutton.

BOYD: Do you just season and cook it as if you were going to eat it at once?

THE PROFESSOR: Yes. --- But there are several things to keep in mind in that connection. You shouldn't put any more meat in any one container than you can use promptly -- once it has been opened. Never use a metal container for storage -- put the meat in an enamel pan, or an earthenware jar or crock.

If you do not have enough fat to make a thick layer over the top when the dish has cooled, you should add more. If any of the meat sticks through the top of the fat, heat some more fat frying hot and pour it over the meat. Then store in a cool place to keep the fat solid. When you get ready to serve the meat, take off the cold fat carefully and reheat the meat.

You should remember, however, that if you find the seal of fat broken, you should question the condition of the meat. It's just as if you had a leaky can in the case of canned meat --- (As if interrupted) What is it, Drake?

DRAKE: Can you can lamb and mutton?

THE PROFESSOR: You certainly can. And you can get the best results by using a steam-pressure cooker.

BOYD: How about preserving fresh lamb with salt, Professor?

THE PROFESSOR: Yes, you can do that, too. But, of course, when you salt it it's no longer "fresh" meat.

BOYD: Well, just how would you salt it?

THE PROFESSOR: Well -- get out your pencil -- jot down these directions --

Of course, you first trim the pieces into shape. Then you examine each one carefully to see that all blood vessels are drained and clots of blood removed. Then for each 10 pounds of meat, you use this mixture:

1-1/2 cups of salt; 3/4 of a cup of brown sugar; 1 tablespoon of cayenne pepper; 2 tablespoons black pepper; and 1 tablespoon saltpeter.

You rub this mixture carefully over every part of the meat. If necessary, you can rub on more of the mixture from time to time. Keep the pieces in a dry place free from flies or vermin.

Before cooking it, you should wash and scrape the meat so as to remove the excess of the preservatives. (As if interrupted) Yes?--

DRAKE: Is lamb and mutton fat as good for you as beef fat? -

THE PROFESSOR: There's little difference --- if any, it's in favor of the lamb and mutton.

DRAKE: Well, Professor, my folks don't like mutton fat.

THE PROFESSOR: Yes, I know, there's a good bit of prejudice against it. You should serve the meat from a hot dish on hot plates --- so the fat won't harden too fast. And, of course, you should serve the gravy from a hot dish.

DRAKE: It's that mutton flavor they don't like. And you know how lamb and mutton run to fat. I guess we waste a lot of mutton fat. Is there any way to kill that mutton flavor?------

THE PROFESSOR: Yes. You can mix two parts of lamb or mutton suet with one part of leaf fat of pork. Then grind the mixture fine. Heat it in a double boiler with about half its weight of whole milk. In that way, the fat is quickly released from the tissues and when strained and allowed to cool forms a cake on the surface of the liquid. This fat has little of that mutton flavor, you complain of.

And where you use the fat in making cream gravy, you can get a better flavor by browning the flour in the hot fat before you add the liquid. Capers, chopped pickle, lemon juice, tomatoes, or currant jelly will also improve the flavor of the gravy.

And as for using the extra fat from an entire carcass. You can render the leaf and other fine fats and save them until you can conveniently combine them with lard in about equal proportions for use in shortening or in frying. The less desirable parts of the fat trimmings can be rendered, unsalted, for use where any heavy grease is needed.

Much of the prejudice against mutton probably grew up as a result of the strong flavor of meat from old or carelessly slaughtered animals. Nowadays, with the more careful selection of animals for the market and the present improved methods of handling and storage there is little ground for such prejudice.

Next week, we will conclude this course on meat production and use by pointing out how to select meat for home use.

###

UNITED STATES DEPARTMENT OF AGRICULTURE — Radio Service — OFFICE OF INFORMATION

PROGRAM U. S. RADIO FARM SCHOOL. SECOND RELEASE Mon. March 7/27.

(NOT FOR PUBLICATION)

SHORT COURSE: Hides, Wool, and Mohair.

LECTURE No. 7: Official Wool Standards.

ANNOUNCEMENT: The second talk on the Radio Farm School brings you some up-to-date information on Official Wool Standards, a subject of keen interest to many farmers at this particular time.

---ooOoo---

(The characters speaking during this lecture are: The Professor himself; and Cameron and Tabb, members of the class.)

(Four or five raps -- as if on desk)

THE PROFESSOR: The class will be in order! -----

Up to this time, we've talked about the growing of wool; the shearing of sheep; and the handling of fleeces ----

But when a fleece of wool is shorn from a sheep, it carries with it a certain value according to its grade --- (As if interrupted) Well, what is it, Tabb?

TABB: Why does wool have to be graded anyway?

THE PROFESSOR: Well, now, if you just needed ten penny nails and you ordered 100 pounds of them, you wouldn't want the dealer to deliver 10 pounds of them in six pennies, 5 pounds in eight pennies and 5 pounds in 12 penny nails, would you?

TABB: No. They are different sizes! There's a lot of difference between nails and wool, though.

THE PROFESSOR: Certainly -- but the principal is the same -- For instance, one of the chief factors in grading wool is the length of the fiber.

The long wools are used in the worsted system of manufacture whereas the shorter wools are used on the woolen system.

TABB: How's that? ---

THE PROFESSOR: As you should know, in the worsted system all the wool fibers are made to lie parallel. The yarn is spun and twisted while the fibers are in that position.

On the other hand, in the woolen system, the fibers are made to lie criss-cross and interlaced as much as possible. Instead of being drawn out as on the

worsted system, the yarn is rolled and gradually stretched as it is being rolled and twisted.

If you were a worsted manufacturer, you wouldn't want short fibre wool, would you?

TABB: Well --- I guess not -- but --

THE PROFESSOR: Or you take the matter of diameter of the fibre. That's another of the chief factors taken into consideration in grading wool. How fine a yarn may be spun from wool depends on the diameter of the fibre.

Take what is known as a 50's quality yarn. That means that 50 hanks each 560 yards can be spun from such yarn and the total 50 hanks will only weigh one pound. It takes a fine wool to make that number of hanks. It would be impossible to spin 50 hanks of yarn out of wool which only had a maximum spinning property of 30 hanks per pound.

Or, take the matter of shrinkage or loss in scouring. That's another of the grading factors. As you know, wool as it comes from the sheep has a certain amount of grease and dirt in it. This extraneous matter must be removed by scouring the wool in vats containing a solution of soap and water. The wool is moved slowly through the liquor. After passing through several tubs, the wool is rinsed with clear water and dried.

The loss in shrinkage in scouring will range from 35 to 80 per cent. In other words, in some sections of the United States 100 pounds of wool as it comes from the sheep will produce only 20 pounds of scoured wool. Whereas in other sections, the yield will run as high as 65 pounds.

In the case of foreign material such as chaff, burrs, straw, and so forth, sometimes there is so much present that cannot be removed by the carding process, that it is necessary to carbonize the wool to get rid of this vegetable matter.

So you see how important grading is --- and it is obvious that it's better that the grading be standardized -- so that buyers and sellers everywhere will have a common language --

TABB: I can see the advantages of grades to the manufacturer -- but I can't see what the grower gets out of it ---

THE PROFESSOR: Well, the advantages are there, all right --

As I was saying, standards are nothing more nor less than the development of a language or a series of mental concepts which enable buyers and sellers to do business with more satisfaction --- and, in many cases, without seeing each other -- or without inspecting the goods in question.

Standard grades eliminate to a large extent the elements of chance and no business is upon the proper basis until this is accomplished. Farming is not on a proper basis until farm products are sold according to their quality as measured by known standards --- Cameron!

CAMERON: Yes, sir ----

THE PROFESSOR: Suppose you tell us some of the advantages you see in standard grades for wool ---

CAMERON: Well, if they are followed, they will insure each grower getting paid according to the quality of wool he produces.

THE PROFESSOR: Yes -- What else?

CAMERON: Standard grades tend to create more confidence among dealers, growers and consumers of the wool. They prevent disputes.

THE PROFESSOR: Yes. It undoubtedly helps to have each party to a transaction thoroughly familiar with the grades and qualities to be dealt in before there is a deal.

CAMERON: The standard grades also make for more efficient marketing --

THE PROFESSOR: They certainly do. There is scarcely one important marketing function which cannot be performed more effectively when wool is graded according to definite standards. In fact, standard wool grades are necessary as a basis for accurate information about wool prices, stocks, consumption, and exports. They also tend to reduce the unnecessary profits made by speculating and manipulating after the wool leaves the producer ----

CAMERON: And as you said before, standard grades constitute a common language between buyer and seller ---

THE PROFESSOR: --- And that's more indispensable than ever in these days when agricultural products from the four quarters of the globe compete in the world's markets ---

And, I might add, standardization is the leading and most important principle in cooperative wool marketing. Without it the chances of success are uncertain. Standardization of wool grades is necessary in order that the wool grower may be taught the qualities and grades of his product according to a uniform and definite set of United States official standard types.

So much for wool. Next week, however, we will have something to say about the production and uses of mohair.

# # # # # #

UNITED STATES DEPARTMENT OF AGRICULTURE — Radio Service — OFFICE OF INFORMATION

PROGRAM U. S. RADIO FARM SCHOOL First RELEASE Wed., Mar. 9

1.9
Ag3Fs

SHORT COURSE: Incubation.

LECTURE No.7: Hatching Turkeys, Ducks, and Geese.

ANNOUNCEMENT: On the U. S. Radio Farm School, this evening, we are continuing our series of lessons on incubation. The schoolmaster will discuss hatching turkeys, ducks and geese. Remember, that at your request we shall gladly instruct the U. S. Dept. of Agriculture to send you the 216 printed lessons supplementing the Farm School.

(The characters speaking during this lecture are: The Professor himself; and Perkins and Gallagher, members of the class.)

*********

(Four or five raps -- as if on desk)

THE PROFESSOR: Let's have a little order, please! ----

I promised several members of the class that we'd give a little time to questions about hatching poultry - other than chickens ----

If any of you have any questions, now's the time to ask them. ---------- Well, Perkins?

PERKINS: Can you hatch turkeys in an incubator?

THE PROFESSOR: Oh, yes. During the last few years, many turkey raisers have done it successfully. But natural methods are still more generally used.

PERKINS: Well, Professor, when should you test turkey eggs?--- I know it takes about 28 to 29 days to hatch 'em.

THE PROFESSOR: You should test them on the tenth and twentieth days.

PERKINS: How warm should you keep the incubator?

THE PROFESSOR: The temperature of the incubator should run at about 101 degrees Fahrenheit -- that is, with the thermometer adjusted so that the bulb just clears the top of the eggs.

You should turn the eggs two or three times a day, up to the twenty-seventh day. On the twenty-seventh day, keep the incubator door closed and don't open it again until about the 29th or 30th day --- because it is sometimes 30 days before the last poults have hatched.

PERKINS: How long can you keep turkey eggs before you set 'em, Professor? You know how turkey hens hide out to do their laying -- and how hard it is sometimes to find the eggs ----

THE PROFESSOR: Yes. Turkeys are still pretty wild in that respect -- but you shouldn't keep turkey eggs longer than two weeks. You should hunt out the nests and collect the eggs every day -- to avoid losses.

The hens usually commence to lay the latter part of the winter or early in the spring, so that their young are hatched when the grass is green. They will lay a litter of eggs and then go broody.

It's usual to set the first litter under chicken hens, and break up the broody turkey hens so they will lay another litter. As you know, you can set from 9 to 12 turkey eggs under a chicken hen -- depending on her size. A turkey hen can cover from 15 to 20 eggs. -----

---- Is there any further question about hatching turkeys?----Well, Gallagher?

GALLAGHER: How about ducks, Professor?

THE PROFESSOR: Well, ducks rarely sit. You have to use either hens or an incubator.

If you use hens, take good care of them while they are sitting. You know, it takes a week longer to hatch duck eggs than it does to hatch hen eggs. And it also takes longer for ducklings to get out of the shell -- than it does chicks. The eggs need more moisture at hatching time. You should sprinkle them with warm water just before the ducklings are ready to pip.

GALLAGHER: In hatching duck eggs in an incubator, do you use the same heat, as for chickens?

THE PROFESSOR: No. The best temperature for duck eggs is 102-1/2 degrees Fahrenheit for the first week--103 degrees from then on to hatching time. And then 104 degrees at hatching time. Of course, that is with the hanging thermometer in the incubator adjusted so that the bulb just clears the top of the eggs.

GALLAGHER: Ducks eggs need more moisture all along than hen eggs do, don't they?

THE PROFESSOR: Yes. They should be sprinkled with water every day or two after the seventh day and until the ducklings are ready to pip.

GALLAGHER: The seventh day is when you test them first, isn't it?

THE PROFESSOR: That's right. The duck eggs should be tested on the seventh and twenty-first days.

GALLAGHER: How about cooling?

THE PROFESSOR: You may cool them from the tenth to the twenty-fifth day. You should turn them twice a day beginning the morning of the third day and ending the evening of the twenty-fifth day.

Keep the incubator closed from the time the first duckling pips until the hatching is over.

GALLAGHER: Would you hatch goose eggs the same way?

THE PROFESSOR: You would cool them the same way -- from the tenth to the twenty-fifth. You would turn them every day from the third through the twenty-fifth. You would use more moisture than with hen eggs -- as you do with duck eggs.

You don't need the incubator so hot, however, as you do with ducks. 100 degrees Fahrenheit is about right for goose eggs. And, you know, it takes some longer to hatch goslings. The hatching may continue from the 28th to the 30th day.------(As if interrupted) What is it, Perkins?

PERKINS: It's more usual to hatch goose eggs under hens than in the incubator, isn't it?

THE PROFESSOR: Yes. Sitting geese are sometimes hard to manage. Many breeders prefer to use hens altogether ---

But when you do that, you should turn the eggs by hand. They are too large for the hen to turn easily.

PERKINS: How many do you usually set under a hen?

THE PROFESSOR: From 4 to 6. From 10 to 11 can be placed under a goose. -----

Are there any more questions. If not, we will turn back to chickens again. Next week, we will consider the buying of baby chicks.

UNITED STATES DEPARTMENT OF AGRICULTURE — Radio Service — OFFICE OF INFORMATION

U. S. RADIO FARM SCHOOL SECOND PROGRAM ..... RELEASE ..... Wed. March 9.

1.9
1m3Fs

(NOT FOR PUBLICATION)

SHORT COURSE: Common Poultry Diseases.

LECTURE No. 7: Bacillary White Diarrhea.

ANNOUNCEMENT: The next radio lesson in the U. S. Farm School this evening is a discussion on one of the common diseases of poultry. The subject of this lesson is "Bacillary White Diarrhea." Go ahead Professor:

(The characters speaking during this lecture are: The Doctor himself; and Drew and Hamilton, members of the class.)

**********

(Two sharp raps -- as if on desk)

THE DOCTOR: The class will be in order! ----------

Last week we talked about coccidiosis.

As you remember, coccidiosis takes its big toll among chickens from 2 to 10 weeks old.---------

Now we come to a similar disease which affects even younger chicks. This trouble, known as bacillary white diarrhea, is caused by a germ known as Bacterium pullorum.

These germs sometimes infect the egg-making organs of the hens. From thence they find their way into some of the eggs these hens lay. When incubated, such eggs are likely to produce chicks already infected with this scourge. Some of the chicks die in the shell. Many of them die soon after they are hatched. Others grow to maturity carrying in their bodies germs which may be passed along to the next generation of chicks, or spread around the yards to be picked up by members of the same flock.

Enormous losses are caused by this disease every year. During the first 48 hours of the lives of baby chicks, fatalities run high. Some apparently recover -- but sometimes 50 to 70 per cent of the hens in a flock may be infected and capable of transmitting the disease.--------

(As if Interrupted) ----- Well, what is it, Drew?

DREW: How can you tell when it is in a flock?

THE DOCTOR: Well, if you are losing a large number of chicks and they are under two weeks old, there's a chance it may be due to bacillary white diarrhea.

DREW: What are the symptoms, Doctor?

THE DOCTOR: The chicks get droopy and weak. They appear dizzy. They may run aimlessly in circles. Or they may sway to and fro -- peeping shrilly as if in pain. There may be a white discharge from the vent ---- And again there may not -- This infection is often mistaken for coccidiosis and a number of less important bowel infections.

If you cut the tiny carcass open, however, the liver usually has a yellow appearance. Ordinarily, too, the yolk material, which is nature's provision for nourishing the chick for several days after hatching, is found unabsorbed in the body cavity.

DREW: Can't you tell the difference without cutting the chick open.

THE DOCTOR: As I said before, time is one of your best indicators. This disease occurs during the first few days of a chick's life. Coccidiosis usually appears after the chick has reached two to four weeks of age -----

(As if interrupted) Yes? -----

HAMILTON: How about the hens? ----- You said they sometimes carry the disease ---- How does it show on them?

THE DOCTOR: Ordinarily, it doesn't show on them --- That's the trouble. They may carry the disease and spread it around without showing any recognizable symptoms. It is only through the symptoms in the chicks or the detection of diseased ovaries in slaughtered hens that attention is directed to the presence of the disease in a flock.

But, of course, a bacteriologist can detect the germs in the blood and organs of the chickens. You should use no hen with the bacterium pullorum in her blood for breeding. You can have the hen's blood tested at your State College. Those that have the germs should be killed.

HAMILTON: What kind of medicine would you give to cure it?

THE DOCTOR: There is no medicine known which is of any value in treating this disease in chicks. You can cut down the losses by proper sanitation however.

You should wipe all eggs thoroughly with a cloth wet with denatured alcohol before putting them in the incubator.

And you should always disinfect the egg trays of your incubator between hatchings, and your brooder equipment before you use it.

Careful incubation may result in raising a clean brood of chicks even from an infected flock.

You can divide the trays of the incubator into separate compartments one or two days before hatching. Make the compartments big enough for from 5 to 10 chicks and fix them so the chicks in one compartment will not be exposed to the chicks in other compartments.

In that way, in case the disease breaks out in any compartment, you can promptly remove, kill, and burn the carcasses of all the chicks in that compartment and so prevent the spread of the disease throughout the tray.

HAMILTON: How long would you keep them separated that way?

THE DOCTOR: At least three days ----- After the first few days the danger is much less,--- and the entire brood may be allowed to run together.

If the chicks live through the first week, they are more resistant to the infection. After three weeks they are comparatively safe. ----- I wish to warn you, however, that after handling weak chicks or those you suspect of infection, you should disinfect your hands before caring for the other chicks. Cleanliness and disinfection are of prime importance in preventing the spread of this, as well as any other infectious poultry disease.

HAMILTON: How should you disinfect? ----

THE DOCTOR: You should scald each and every feeding and drinking utensil -- each and every day. You should disinfect the premises with a five per cent solution of creosol.

And always remember that sound feed, bright clean litter, and general sanitation are big helps in preventing baby chick losses.

Next week we will conclude this series of talks on poultry diseases with a discussion of the worm parasites of poultry and how to get rid of them.

# # # # # # # # #

UNITED STATES DEPARTMENT OF AGRICULTURE
Radio Service
OFFICE OF INFORMATION

U. S. RADIO FARM SCHOOL FIRST Fri. Mar. 11.
PROGRAM RELEASE

1.9
9m3Fs

NOT FOR PUBLICATION

SHORT COURSE: Dairy Farm Engineering.

LECTURE No. 7: Cow Yards and Manure Pits.

ANNOUNCEMENT: In the first lesson on the U. S. Radio Farm School program we are bringing to a close the course on Dairy Farm Engineering. All of these lectures are in printed form and are sent without charge to those who request them. In fact, you may have the entire 216 lessons for the price of a postage stamp. The first lesson is on cow yards and manure pits.

(The characters speaking during this lecture are: The Professor himself; and Lynn and Coleman, members of the class.)

*********

THE PROFESSOR: Gather around closely, men! -----

I don't want you to think that because this is an inspection trip -- that you members of the class are going to get out of answering questions------

But first, let me call your attention to this manure shed. You'll notice it is about 300 feet from the barn. That's the requirement for certified milk production. And, no matter what the requirement, it should never be less than 100 feet from the barn ------

LYNN: Professor, manure should be hauled to the fields as soon as possible, shouldn't it?

THE PROFESSOR: That's right, Lynn. It should. Not only for sanitary reasons but because it decays quickly. That results in loss of plant food. But still you should have a place to store it, when you can't drive on the land.---------- Is Coleman here?

COLEMAN: Here I am, Professor! ----

THE PROFESSOR: Well, Coleman. What do you consider the chief features of this shed.

COLEMAN: I'd say it's about 20 feet wide and 25 feet long -----

THE PROFESSOR: Yes, it's a good size for a herd of 20 cows and for storage of not over three months. For that amount of storage it wouldn't be necessary to stack the manure over 6 feet high in this shed -----

Of course, all you men understand that the size of the shed needed will vary according to the length of time you have to store the manure.-------

What else can you say about this shed, Coleman?

COLEMAN: Well --- it's got a good roof and a concrete floor with side walls about 4 feet high.

THE PROFESSOR: Now, you're getting to the real essentials, Coleman. A properly constructed roof will protect the manure from rain --- and that floor will prevent loss through seepage -----

But there's another feature you've overlooked. --------

COLEMAN: The shed is built so the spreader can be driven in for loading.

THE PROFESSOR: Yes. That's important. And I might add that if you have to store manure in summer, it's a good idea to have the sheds screened to prevent the breeding of flies in the shed ---- Now look across there toward the barn and see what you think of those cow yards ----

By the way, Lynn, what would be your first consideration in locating a cow yard.

LYNN: Well, the yard ought to be well drained.

THE PROFESSOR: Yes. When a herd of cows is in a small pen, the ground is likely to get very muddy if the water from rains or seepage does not drain off readily. Therefore, the cow yard should have a good slope from the barn ----

COLEMAN: What you going to do if the land don't slope?

THE PROFESSOR: Haul in several loads of dirt and gravel --- if necessary.---- Gravel is better ----

But in case you use it, use a little clay with it, to act as a binder. And also see that the pieces of stone are fine and well packed down ---- Otherwise, small stones may get between the hoofs of the cows and cause lameness ----

Of course, concrete barnyards are best. They are permanent and easy to clean. They are rather expensive, but in many places at least

a part of every parnyard might well be paved with concrete --- not any part where there is a steep slope, though ----- there's too much danger of the cows slipping and hurting themselves when the ground is covered with snow or ice ------ All right, Lynn, what else would you take into consideration in locating a cow yard?----

LYNN: There ought to be some sort of windbreak --- on the side from which the cold winds come.

THE PROFESSOR: Yes. You need a natural hedge or board fence or some such protection to break the wind -- usually from the north and west. A good plan is to have open sheds on at least a part of the north and west sides of the cow yard. They should open on the sides next to the yard, and provide shelter from winds, cold rains, and snow when the cows are turned out for exercise. -------- Well, is that all, Lynn?

LYNN: The yard ought to be located so as to make it easy to unload hay, fill the silo, and carry out the manure.

THE PROFESSOR: Yes, - By your answer, you seem to assume that the silo will be placed in the yard and the manure pile outside. That's a good arrangement. Under no conditions should the manure pile be inside the yard, although the silo might well be inside. But it should be convenient to drive in and out the yard with feed. When filling the silo, it should only be necessary to open one or two gates. The lanes should be located so that the cows can be shut out of the yard at such times. And naturally the cow yard should not be near the milk house or the wells that furnish the water supply for the house and barn --

---------- But let's take a turn around that cow yard there and see just how it is arranged ----- Open that gate there, will you, Dawson! ------ Go right up toward the barn ------

Just a minute, men! Before we inspect the arrangement of the yards, take a look at this gate. You see it's swung on heavy hinges and is built so it will not sag.

COLEMAN: Why won't it sag? --

THE PROFESSOR: Well, you see how it's made don't you? There are the five 12 foot long 1 by 6 boards for horizontals, with double cross pieces for vertical braces at each end and double cross pieces for a vertical brace in the middle ---

COLEMAN: Yes, but ----

THE PROFESSOR: Now these double diagonal pieces, you notice, are nailed on to prevent sagging. This pair extends from the bottom of the center vertical brace to the top of the swinging end of the gate here. Ant that pair there extends from the bottom of the hinge post to the top of center vertical brace.

A gate built like this and hung on a solid post with strong hinges like this will not sag.

And you'll notice that post near the ground line. You see the base has been creosoted to prevent decay. All the fence posts are the same way. All wooden posts should be treated that way --- and well above the ground line, too --- for the ground line is where they are most likely to decay ----

Let's go on in and see the yard now -- Next week we will make the last of these inspection trips -- I want to show you some dairy barn equipment.

UNITED STATES DEPARTMENT OF AGRICULTURE — Radio Service — OFFICE OF INFORMATION

PROGRAM U. S. RADIO FARM SCHOOL Second RELEASE Fri. Mar.11.

1.9
9n3Fs

NOT FOR PUBLICATION

SHORT COURSE: Breeding Dairy Cattle.

LECTURE NO. 7: Selection By Type

ANNOUNCEMENT: Breeding Dairy Cattle is a big subject and at this period for several weeks the radio schoolmaster, who represents the dairy authorities of the U. S. Department of Agriculture, has been discussing various important phases of it. This evening his subject is "Selection by Type."

* * * * * * *

(The characters speaking during this lecture are; The Professor himself; Locke and Judson, members of the class.)

LOCKE: You heard what the Professor said, didn't you? He certainly didn't think much of selecting dairy cattle by their looks ----

JUDSON: I'm not claiming I can pick a good bull by his looks --- I'll admit I go by pedigrees as well as looks in picking a bull ----------

LOCKE: I guess you do. You know as well as I do -- the best type of bull may get daughters that are absolutely hopeless as producers. -------
And, on the other hand, some of the highest producing cows come from bulls that are not much for looks -------

JUDSON: Sure. I'll even admit that the Professor was right -- when he said that the best way to select a bull is by the records of his daughters --
But I'm not talking about bulls. I do claim, however, that I can pick cows with producing ability when I see them.

LOCKE: Maybe you think you can! I'd rather rely on my milk scales and Babcock tester. They'll show what the cows can actually do. Type and pedigree may be all right -- but milk is a whole lot more convincing.

JUDSON: The livestock judging ring is a pretty old institution, isn't it?

LOCKE: Yes. I understand that cattle have been judged at public shows since 1799 --- but what's that got to do with it? ----

JUDSON: They've taught livestock judging in our State agricultural colleges for thirty-five years, haven't they?

LOCKE: Something like that -----

JUDSON: And breeders have been handling dairy cattle for hundreds of years before that, haven't they?

LOCKE: Yes. And neither breeders -- nor judges have always agreed during that time. During the 125 years of show-ring work with cattle, ideas about what makes an ideal type of dairy cow have varied a good deal.

JUDSON: Maybe they have. But the underlying principles and the main ideas about what a good dairy cow should look like haven't changed much. And the bais for teaching judging everywhere from the boys' and Girls' clubs up to the universities have come from the show ring ------

LOCKE: Well? ----

JUDSON: Well, when an institution has lasted as long as the show ring -- and its teachings have been accepted as long as the show ring's have, it's pretty sure to be sound in principle, isn't it?

LOCKE:-- Of course, you can judge some clases of animals according to type -- but when it comes to milk production, you're dealing with something which don't show on the surface.

JUDSON: It stands to reason that the keen observations of breeders through many generations are not all off the mark. They have recognized the things about a cow that show her ability -----

THE PROFESSOR: Hello, Locke! --- What are you and Judson arguing about now? -----

LOCKE: Judson claims that he can tell a high producing cow by her looks, Professor.

THE PROFESSOR: If he can, he can make a name for himself, Any breeder of dairy cattle would consider it a big advantage if he could be shown a reliable method of selecting by physical examination animals capable of high milk and butterfat production. How do you do it, Judson?

JUDSON: I just go by the standards of type that have been worked out in the show ring and other places -----

THE PROFESSOR: Well, much has been done along that line. And much has been done to instill into the present and coming generations the ideals that now prevail. It's an important work. It's worthy of support. But there is still a lot we have to learn about dairy type -- especially when it comes to applying it to individual cases -------

What are some of the characteristics you go by in judging the producing ability of a cow?

JUDSON: Well, she should have a deep, wide, well-rounded chest.

THE PROFESSOR: Why so? --

JUDSON: A chest like that shows a strong constitution. It's necessary for high production.

THE PROFESSOR: Is it? Let's analyze what you say. In reality you are assuming, are you not, that the wide chest gives a greater space for the heart and lungs -- the so called vital organs?

JUDSON: Yes.

THE PROFESSOR: And you are not only assuming that the outside appearance is a direct indication of the size of the chest cavity, but that the greater space is actually occupied by larger organs.

JUDSON: Yes, I guess that's right.

THE PROFESSOR: And you are also assuming that the larger organs result in stronger constitution and high production ---- What evidence have you that such is the case?

JUDSON: Well, of course, we don't go by just one characteristic ------ A high producing cow will also have a deep, long, wide, well-sprung barrel -- That makes for big digestive capacity -------

THE PROFESSOR: Wait there, Judson. You're drifting into assumptions again. You are taking it for granted that the cow with large abdominal dimensions has large digestive organs. And also that the large digestive organs result in ability to eat, digest, and make use of large quantities of feed, and therefore to produce large quantities of milk.

The trouble is you are taking too much for granted. You have too little evidence go on.

However, I want this whole class to know that we are now going after the evidence. The United States Bureau of Dairy Industry is now engaged in an investigation which may place the judging of dairy cattle on a more scientific basis. They have already made several discoveries ---------

LOCKE: What have they found out, Professor?

THE PROFESSOR: We'll talk about that next week, Locke. We will not only point out what has already been discovered, but will show you how the Bureau is doing it.

UNITED STATES DEPARTMENT OF AGRICULTURE — Radio Service — OFFICE OF INFORMATION

PROGRAM..... RELEASE.....

1.9
Sm3F5

U. S. RADIO FARM SCHOOL First Mon. Mar.14.

SHORT COURSE: Meat Production and Use.

LECTURE NO.8: Selection of Meat for Home Use.
(NOT FOR PUBLICATION)

ANNOUNCEMENT: "Selection of meat for home use" is the first subject for discussion on the U. S. Radio Farm School, a topic of considerable interest to the consumer as well as the man on the farm who produces it. Remember to get in your request for the 24 booklets, including 112 printed radio lessons prepared by the U. S. Department of Agriculture. Now it is the radio schoolmasters' turn.

* * * * * * *

(The characters speaking during this lecture are: The Professor himself; Trent and Miller, members of the class.)

* * * * * * *

(Three or four raps -- as if on desk)

THE PROFESSOR: The class will be in order! ------

Trent!

TRENT: Here!

THE PROFESSOR: I want you to select some meat for the class, Trent. Last week we talked about cooking meat. We emphasized the importance of adapting your cooking to your cut. But now we want you to tell us what cuts to select ---

TRENT: For what meal, Professor?

THE PROFESSOR: Well, of course, you wouldn't select frankfurters for a formal dinner or rib roast for a picnic. And we all know how shocked Mrs. Jiggs gets when Jiggs insists on his corned beef and cabbage. She's a great stickler for the custom which prescribes that corned beef and cabbage be reserved for the informal family meal; to which is brought a hearty appetite, induced by physical labor.

Custom also more or less demands that we have chops or sweetbreads or creamed chicken for formal lunch. Sausage or liver and bacon for breakfast.

Of course, we all here recognize that custom limits your choice of meats -- but suppose you just tell us what kind of meats you usually buy for supper.

TRENT: I usually buy quick cooking meats, such as steaks and chops and cutlets.

THE PROFESSOR: Why do you do that?

TRENT: It saves time and trouble -- you can broil the tender ones, and they are all thin enough so you can cook them quicker than you can pot roasts or stews.

THE PROFESSOR: If you would use a little forethought, you could cook roasts just as easily. With modern equipment, you can prepare pot roasts and stews in advance and let them cook slowly while the cook is busy at something else. As a matter of fact, if you have an oven, roasting requires less time and attention than almost any other method of cooking meat. (As if interrupted) Well, Miller?

MILLER: Professor, last time you told us to roast or broil the tender, more expensive cuts of the rib and loin.

THE PROFESSOR: Yes. Since you pay a premium for tenderness in meat, it is uneconomical to buy a tender cut and cook it by a method adapted to the less expensive cuts.

MILLER: Well, how would you cook a chuck steak?

THE PROFESSOR: That depends on how tender it is. In the younger animals certain of the chuck and, if the animal is fat enough, the rump and certain of the round cuts are also tender enough to be cooked by roasting and broiling. They do not need the addition of any water --- and you make a mistake if you add any water in cooking them.

On the other hand, all of the chuck in some animals is usually too tough to be cooked without water. Even in the better type of animals, parts of the chuck, the round, and the loin ends with the plate and the brisket are also generally too tough -- so we give them a long, slow cooking with a small amount of water added.

Such cuts are very satisfactory for pot roasts and stews. Of course, which method you use depends a good deal on whether the meat is in small pieces or in the shape of a roast -----(As if interrupted) Yes?

MILLER: How would you cook the tougher steaks?

THE PROFESSOR: By any methods which combine a preliminary browning of the outside and then long, slow cooking in their own juices.

In buying a steak, it's a good idea to specify the thickness you want and about the weight you need. In ordering chops, you should indicate the thickness and number of chops. The same holds true of roasts. It is hard to cook a rib

roast satisfactorily unless it is at least two ribs in thickness.------

But, by the way, Miller, how do you tell the different cuts?

MILLER: You can tell by the shape of the bone and the muscle.

THE PROFESSOR: Yes, those are the most important characteristics. Well?

MILLER: The round steak, for instance, has a round bone and the T-bone steak of the loin has a T shape bone.

THE PROFESSOR: The United States Bureau of Agricultural Economics has charts from which you can learn the shape of the steaks from the different parts of the loin.

It pays to educate yourself as to cuts and the characteristics of cuts. You should know which are the most tender. You should learn the comparative amount of fat, lean, and bone in the different cuts. It's also important to know how to distinguish grade ----- for you are supposed to be paying for grade.

As we've pointed out before, the younger animals with a fair distribution of fat are the most tender. The fat, particularly that part of it which is mixed in through the lean, is very important in cooking meat. Meat with a good intermixture of fat and lean is usually juicy -- and juiciness makes meat more palatable.----

Now, Trent, from what we've said here, I'd like for you to sum up how to select meat.

TRENT: Well, I'd say the best way is to first know what you want. Then ask for it in definite terms --- and know enough to be sure you are getting it.

THE PROFESSOR: Correct! --------- Now at this period next week we will start a class in livestock equipment, such as fences, creeps, and so forth.

* * * * * * *

UNITED STATES DEPARTMENT OF AGRICULTURE — Radio Service — OFFICE OF INFORMATION

U. S. RADIO FARM SCHOOL — SECOND PROGRAM — RELEASE Mon. Mar 14.

1.9
Ag3Fs

SHORT COURSE: Hides, Wool, and Mohair

LECTURE No. 8: Production and Uses of Mohair.

ANNOUNCEMENT: Last week, you remember we talked for a few minutes about care and marketing of hides. Tonight our radio schoolmaster will give you some pointers about the production and use of Mohair and the marketing of these hides. Remember please that enrollment in the U. S. Farm School automatically puts you on the mailing list for 24 booklets of printed radio lessons published by the U. S. Department of Agriculture. There is no charge simply send us your name and address.

(The characters speaking during this lecture are: The Professor himself; and Armstrong and Reed, members of the class.)

**********

ARMSTRONG: What did you say the Prof. is going to talk about?

REED: Mohair.

ARMSTRONG: Mohair comes from goats, doesn't it? What do they use it for mostly?

REED: It looks like you ought to know, Armstrong. Didn't I see you drive up in a closed automobile?

ARMSTRONG: Yes --- but what's that got to do with it?

REED: Nothing -- except you fellows with that type of car have boosted the demand for mohair.

ARMSTRONG: How so?

REED: Why, they use it to upholster automobiles --- just as they've used it for years for furniture and Pullman cars ---

ARMSTRONG: I didn't know that --- I knew they use it in summer suits sometimes.

REED: Not only that. They use it in dress goods, coat linings, lap robes, curtain braids, draperies, imitation Astrakhans and furs and a lot of other things -----

ARMSTRONG: You wouldn't think they could make stuff with the luster and evenness some of those things have out of goat's hair, would you?

THE PROFESSOR: Armstrong! --- If you and Reed will stop talking -- we can start the class.

I want to tell about a visit I made with a Western farmer not long ago.

We were standing looking out over a heavy stand of many acres of alfalfa. "A few years ago," he said, "that land was covered with dense brush. Do you know how I got it cleared?"

"No," I said, wondering what he was driving at. Instead of answering he gave a shrill whistle.

As I looked around, hundreds of goats, kids, does, and bucks, began to appear from further back in the hills, where they had been working on a new piece of brush land.

"They certainly look well fed and well cared for," I remarked, as we got closer to them.

"They are well cared for," he said. "The trouble with a good many fellows who start in the goat business is that they get the idea that a goat will eat anything, drink anything, and stand all kinds of weather.

"Fact is," he continued, "Angoras are dainty eaters. When they are browsing and it is necessary to give them hay, grain -- such as oats -- and other feeds, you have to keep the feed clean. They don't like to eat stuff that's been trampled under foot. And they don't like water with a bad taste or smell. You have to give them clean water if you expect them to do well."

He seemed to take great pride in the fact that his goats looked so fine. He said that they paid for the good care they got in high-quality mohair. And I guess if you men here will stop to think you'll realize that you can't expect to produce fibers which will make up into glossy, even, long-wearing fabrics without care.

This successful Angora raiser I was talking to especially emphasized the fact that the kids need much care and shelter until they can get a good start. This usually takes about two months-----(As if interrupted) What is it, Reed?

REED: Goats will thrive on land not suited for other animals -- won't they?

THE PROFESSOR: Oh, yes. There are many flocks of Angoras now being used for browsing on such lands -- and they are doing their work well. Other flocks are clearing small trees and underbrush so that the natural grasses

will have a chance to grow and be used by other kinds of livestock. Still others are being used for the complete clearing of land which will later be put into grass, grain, and other crops. Angoras will graze on almost any kind of grass and will browse on shrubs, bushes and trees that are not relished as much by other animals. They are bringing in good profits, both from their work in clearing land and from the sale of their mohair.

If you breed goats, however, please keep in your mind that a good grade of mohair has qualities that low grade hair lacks. Many Angora goat raisers could secure still greater profits - by giving more attention to their breeding operations.

REED: How would you go about it?

THE PROFESSOR: Well, I do have a definite plan of breeding --- with the idea of not only maintaining the vigor of my flock - but of improving the quality of the mohair. I would never use a buck with kempy fibers in his fleece, if I could possibly avoid it ---- (As if interrupted) Yes? --

ARMSTRONG: What do you mean 'kempy' fibers, Professor?

THE PROFESSOR: Kemp is the stiff, coarse, brittle fibers. It is very objectionable to the manufacturer. Such fibers lack the luster, evenness, and other desirable qualities of good mohair ----

If you can not get bucks entirely free from kemp, you should use only those which are as nearly free from it as practicable. Select the bucks for breeding carefully with this in mind.

I trust that it is not necessary to tell you to be careful to keep the fleeces clean during shearing ---- (As if interrupted) Well? --

REED: You should roll them with the flesh side out, shouldn't you?

THE PROFESSOR: Yes. And place each fleece in the sack carefully so that it will be by itself. The mohair from the kids, does, bucks, and wethers, representing different grades, you should pack in separate sacks -- so it will look better ---- and so it will command a better price from the buyer.

With this we will now close this short course on hides, wool, and mohair. Next week at this period we will begin a short course on work horses and mules with a brief talk on the use of animal and mechanical power on the farm.

#######

UNITED STATES DEPARTMENT OF AGRICULTURE
Radio Service
OFFICE OF INFORMATION

PROGRAM U. S. RADIO FARM SCHOOL First RELEASE Wed. Mar. 16

NOT FOR PUBLICATION

SHORT COURSE: Incubation

LECTURE NO. 8: Buying Baby Chicks.

ANNOUNCEMENT: Buying Baby Chicks, a most timely poultry subject is the first topic for consideration on the U. S. Farm School this evening. This talk brings to a close the series on incubation. The entire set of 216 printed lessons are sent to all listeners who request them.

* * * * * * *

(The characters speaking during this lecture are: The Professor himself; Godfrey and Newton, members of the class.)

* * * * * * *

(Four or five raps -- as if on desk)

THE PROFESSOR: The class will be in order! -----

For several weeks now we've been discussing questions about the hatching of chicks ----

But a lot of you poultrymen do not hatch chicks ---- you buy them instead.

Every year that practice is becoming more and more general.

Last year, farmers and poultrymen in this country bought at least 500,000,000 chicks from commercial hatcheries alone. (As if interrupted) Well, Godfrey?

GODFREY: Is it more economical to buy baby chicks than to spend time running an incubator to hatch your own?

THE PROFESSOR: Evidently a good many people think so -----

GODFREY: Would you recommend it?

THE PROFESSOR: Well, in many cases it's much simpler to buy chicks and brood them, than it is to operate the incubator. In such cases, I'd say 'buy them; if you are sure you're getting high-quality chicks.'

GODFREY: How you going to guarantee that?

THE PROFESSOR: Well, you should pay particular attention to the kind of hatchery from which you buy them. Above all, don't buy cheap chicks. It stands to reason that cheap chicks usually come from low-grade hatcheries. The eggs from which they are hatched are often secured in the open market. And, what's worse, little or no attention is paid to the selection of the eggs.

As we have pointed out before, good chicks can not be produced from poor eggs.

The eggs sent to the hatcheries should be of good size, as well as uniform in shape, shell color, and shell texture.

Day-old chicks of the highest quality, however, are produced in those hatcheries where the breeding flocks supplying eggs for the hatcheries are also inspected carefully -- and culled rigidly. Only the best birds in the flocks are used as breeders and the poultry plant where the breeding flocks are maintained is kept in sanitary condition at all times.

Not only that, but thehatcheries where incubation is carried on should be kept in strictly sanitary condition. The management of the incubator should be such as to produce the highest possible quality of chicks. (As if interrupted) What is it,Newton?

NEWTON: According to postal regulations, baby chicks must reach their destination within 72 hours after they are hatched -------

THE PROFESSOR: Yes, that's an important thing to keep in mind --- especially as many buyers make the mistake of ordering chicks from a hatchery at a great distance.

It seems to be a case of far-away pastures looking greener. As a matter of fact, in many cases just as good-quality chicks -- and sometimes better -- can be bought near home. Buying near home not only saves transportation charges, but the chicks spend much less time on the road. They should arrive in much better condition than when long-distance shipments are made.

NEWTON: When's the best time to buy them?

THE PROFESSOR: Do you mean, the best time to place your order -- or the best time to get the baby chicks? I'd say order them early in the season ---- well in advance of hatching time.

You know that many of the best hatchery operators -- those who have direct control over their own breeding flock --- are booked up well in advance. For that reason, you should get your orders in early. Otherwise, you may have to buy cheap, low-grade chicks later in the season.

And when ordering your chicks, remember that the early hatched chicks are usually more profitable than the late hatched ones.

NEWTON: When should Leghorns be hatched?

THE PROFESSOR: By the fore part of May in most parts of the country --- that is, if you want them to be in good laying condition by the middle of October or the fore part of November.

NEWTON: Is it the same for Plymouth Rocks?

THE PROFESSOR: No. Heavier breeds such as Plymouth Rocks, Rhode Island Reds, and Wyandottes, should be hatched not later than the middle of April -- if you are going to have them laying at the most profitable season of the year.

NEWTON: Would it be all right to buy those that are hatched much earlier in the season that that?

THE PROFESSOR: No. Don't buy baby chicks too early -- unless you have a special market. Those hatched extra early are apt to start laying as early as August or September. Then after laying a few eggs they may go into a neck molt or even a complete body molt.

During that time, few, if any, eggs will be produced at the time of the year when eggs are bringing the highest prices. Plan to buy your chicks so that they will come into laying condition by the middle of October or the first of November at the very latest. High-quality baby chicks bought at the right time and given proper care will develop into profitable egg producers next fall.

But there are several problems connected with brooding and rearing young chickens. Next week at this time, we will begin a short course in which we shall take up some of those questions. We'll talk about brooding with hens and with artificial brooders, about feeding baby chicks and young stock, and a number of other points.

UNITED STATES DEPARTMENT OF AGRICULTURE — Radio Service — OFFICE OF INFORMATION

U. S. RADIO FARM SCHOOL Second Wed. Mar.16.

PROGRAM..... RELEASE.....

NOT FOR PUBLICATION

SHORT COURSE: Common Poultry Diseases.

LECTURE NO. 8: Intestinal Worms.

ANNOUNCEMENT: The next lesson concludes our series on Common Poultry Diseases. For the next few minutes we're going to talk about "Intestinal Worms" in poultry, a subject of vital interest to every poultryman. If you are not receiving printed copies of all the Farm School talks from the U. S. Department of Agriculture make your request direct to this station at once.

* * * * * * *

(The characters speaking during this lecture are: The Doctor himself; Hamilton and Bruce, members of the class.)

* * * * * * *

(Two sharp raps -- as if on desk)

THE DOCTOR: Order in the class-room!

During the past few weeks, we've been considering common poultry diseases ---

Now -- last but not least -- we must talk about worms.

All of you realize, I take it, that the worms which live as parasites in the digestive tracts of chickens cause tremendous losses to poultry raisers --- Some of that damage is direct -- and some is indirect.

As you know, the worms give off poison -- or cause bleeding and inflamation along the food canals -- or become so large or so numerous as to clog the way or otherwise interfere with proper digestion.

The damage is often so great as to kill the fowl. Less heavy infestation, however, often results in lowering the resistance of the birds so they more readily fall victims to some of the other diseases we have discussed here. (As if interrupted) Well -- What is it, Hamilton?

HAMILTON: How can you tell when a chicken has worms?

THE DOCTOR: Well, if your birds are thin and dull -- Or if they have pale combs and wattles -- Or if they show either constipation or diarrhea -- it may possibly be due to worms ----- Of course, you realize it's hard to determine the cause of disease or unthriftiness in a flock of poultry.

If your chickens don't look well, I'd advise you to call in a veterinarian for diagnosis and treatment --- There are a number of different kinds of worms.

HAMILTON: What kind of treatment do they give for worms?

THE DOCTOR: That depends a good deal on the kind of worm. For instance, you wouldn't treat roundworms and tapeworms the same way.

BRUCE: What's the difference, Doctor?

THE DOCTOR: Briefly, the tapeworms are white and flat. Their bodies are made up of a number of joints or segments. Other worms found in the digestive tract do not have these flat, segmented bodies and so are known as roundworms. Eggs of the roundworms, dropped around the poultry yard by infested chickens, can develop in the ground or litter to such a stage that when eaten by other chickens they will develop into adult roundworms in those chicken's digestive tracts. Tapeworm eggs, however, must be eaten by insects, snails, or other small invertebrate animals and spend one stage of their life inside these animals before they are capable of infesting other chickens. Chickens become infested through eating the insects or other intermediate hosts of the tapeworm. (As if interrupted) Yes.

HAMILTON: Doctor, what is the treatment for tapeworms in chickens?

THE DOCTOR: A drug known as kamala is very effective in removing the worms.

HAMILTON: Do you feed it in the mash?

THE DOCTOR: No. The chickens don't like the taste of it. You should give it to them in the form of pills or in capsules. The dose for a chicken is 1 gram and for a turkey is 2 grams. I'd advise you, however, to treat a few birds first to make sure the dose is correct before treating the whole flock.

HAMILTON: What do you use for treating roundworms?

THE DOCTOR: Well, the two most common roundworms are: One found in the intestines, which is 3 to 4 inches long and may be present in such large numbers as to block the passage of food; and another, which is found in the blind gut and is about 1/2 inch long; this latter conveys blackhead to turkeys. You can remove the large worms by feeding the chickens a mash of which 2 per cent, by weight, is tobacco dust containing at least 1.5 per cent nicotine. You should feed this mixture to the flock for 3 or 4 weeks. This will also remove some of the small worms from the ceca, but these are best removed by rectal injections of chenopodium in a bland oil. This treatment is discussed in Farmers Bulletin No. 1337 on diseases of poultry.

BRUCE: Doctor, a lot of our chickens and turkeys were killed last year. The veterinarian said it was due to a very slender, thread-like worm which he found in the esophagus and crop, of a chicken.

THE DOCTOR: Yes, I know the worm you refer to. It caused serious damage last year.

UNITED STATES DEPARTMENT OF AGRICULTURE — Radio Service — OFFICE OF INFORMATION

PROGRAM U. S. RADIO FARM SCHOOL First RELEASE Fri.Mar.18.

1.9
1.3F3
Dai3

NOT FOR PUBLICATION

SHORT COURSE: Dairy Farm Engineering.

LECTURE NO.8 Dairy Barn Equipment.

ANNOUNCEMENT: On the U. S. Farm School this evening you hear the last of a series of eight lessons on Dairy Farm Engineering. All these talks have been printed in booklet form by the U.S. Department of Agriculture and the entire set of 216 radio lessons will be sent you upon request to this station.

* * * * * * *

(The characters speaking during this lecture are: The Professor himself; Cobb and Reynolds and Bailey, members of the class.)

* * * * * * *

(FOUR OR FIVE RAPS -- AS IF ON DESK)

THE PROFESSOR: The class will settle down, please! -----

Remember we are not on an inspection trip ---

During the past few weeks, we've visited a few farms to get first hand ideas about how to construct buildings and enclosures for dairy cattle --- but what's a modern barn without modern equipment? ----

At various times on our trips, several of you have asked questions about equipment. Maybe others of you have seen things you would like to enquire about -- so, now, we are going to devote this last class to equipment.

As you all realize, I hope, consideration of dairy-barn equipment should begin at the time the barn is being planned -- so that you won't have to do any unnecessary cutting and fitting. Now, suppose we start with stabling equipment such as stanchions, stall divisions, and box stalls. Are there any questions? ------Yes, Cobb? ---

COBB: What are the best kind of stanchions to use?

THE PROFESSOR: The swinging type. They are better than the rigid type. They are simple and sanitary. They are convenient. They hold the cows in alignment with the platform and gutter; and so help keep the cows clean. You should also have stall partitions to prevent the animals from crowding or stepping on each other.

COBB: Should the partitions be wood or iron piping?

THE PROFESSOR: Either will do. I prefer iron piping. It is easily cleaned and it doesn't interfere with the proper circulation of the air.

COBB: You mentioned box stalls. Is it necessary to have box stalls?

THE PROFESSOR: Yes, for the sick cows. They are also often used for cows on test. They should be located at one end of the barn -- away from the milking herd.

COBB: How many should you have?

THE PROFESSOR: Well, if you use them as maternity stalls only, one box stall for every ten stanchions will be enough.

The stall floor should be concrete or some other lasting material. It should be provided with a drain and should be heavily bedded when in use.

COBB: What size would you make 'em?

THE PROFESSOR: 10 by 12 feet will give plenty of room. Have a stanchion and feed manger on the side next the alley. The sides may be either iron pipes or planks, but they should be at least five feet high. ---- (As if interrupted) What is it, Bailey?

BAILEY: Where's the best place for grain bins in a two story barn?

THE PROFESSOR: Reynolds -- You have good feeding equipment -- tell him how yours is arranged.

REYNOLDS: Ours is built at one end of the second floor. We have space there for storing sacked mill feed, too. Right near by we have a feed grinder and mixed feed bins and a mixing floor. The mixed feed bins have sloping bottoms which open into the feed room on the ground floor. All we have to do to fill the feed cart is to run it under the chute and open her up.

THE PROFESSOR: Yes. And any of you who have a considerable amount of grain to store could save labor with a grain elevator of the chain and bucket type. You could run both the elevator and the feed grinder by an electric motor, a gas engine, or a farm tractor. If you use a gas engine, however, you should locate it in a separate room or building ---

REYNOLDS: We also have a hay track with slings for hoisting the hay, and a hay chute leading down to the feeding alley.

BAILEY: Do you keep all the feed on the second floor?

REYNOLDS: All except the silage and roots for fall and winter feeding. We store the roots in the basement under the barn. Its frost proof and well ventilated.

THE PROFESSOR: You also have a feed carrier hung from a track, don't you Reynolds? That cuts down the work of feeding livestock materially.

REYNOLDS: No, sir. We use a truck. You know the kind -- with two little wheels under the center and a swiveled castor on either end -----

We have a spring-balanced scale attached to the truck, so we can weigh the amount of grain for each cow -----

THE PROFESSOR: That's a good arrangement. I suppose you just fork the hay from the hay chute to the cows.

REYNOLDS: Yes, sir.

THE PROFESSOR: If you have to carry the hay a considerable distance and your feed alleys are wide enough, you would save time and work by having a big hay cart. ----

How about the water for the herd?

REYNOLDS: We've got an outside tank --- but we are going to put in individual watering cups --- so the cows can drink at any time.-------

THE PROFESSOR: That's good -----

Well, do any of the rest of you have any questions or suggestions in regard to equipment? -------

Some you still stick to the wheelbarrow in carrying out litter, I know. But many of you here use litter carriers which run on overhead tracks or cables ------- they are big work savers.

Clipping machines for clipping the hair on the cows' tails, flanks and udders are also desirable. You can run the machine by hand or motor by power where electricity is available.

COBB: How about milking machines, Professor?

THE PROFESSOR: They're practical -- if you follow the directions carefully and clean and sterilize the machines, properly.

And speaking of milk equipment, you should have a spring balance milk scale and a daily record sheet in a little room just outside the dairy barn -- so you can keep track of the production of each cow.

You should also provide fly sprayers, and flytraps to keep the flies in control. If you will write to the U. S. Department of Agriculture they will send you a bulletin on flytraps and their operation.

Of course, every dairy barn should have a closet with a shelf and several heavy hooks where the tools and small pieces of equipment can be stored in a systematic manner.

And the barn should be provided with lightning rods -- properly grounded and you should have fire extinguishers conveniently placed and kept in working order -----

We'll close this series of talks now. Next week at this period, we will turn the class over to the veterinarian, who will talk over the cow's troubles with you.

UNITED STATES DEPARTMENT OF AGRICULTURE
Radio Service
OFFICE OF INFORMATION

PROGRAM U. S. RADIO FARM SCHOOL SECOND RELEASE Fri., Mar. 18.

9 Fm3Fs

NOT FOR PUBLICATION

SHORT COURSE: Dairy Cattle Breeding.

LECTURE No. 8: Conformation.

ANNOUNCEMENT: Our Dairy Breeding Short Course also comes to an end this evening with a little talk on "Conformation." Alright Mr. Schoolmaster, take charge of the class.

(The characters speaking during this lecture are: The Professor himself; and Locke and McClure, members of the class.)

********

THE PROFESSOR: Well, here we are, men! ------

I've brought this class out in the open here -- to show you what we are trying to do -- to find out more about the meaning of type in dairy cattle -----

McCLURE: What's the idea of the score-board, Professor?

THE PROFESSOR: What score board?

McCLURE: That thing there by the barn -- with the six inch squares lined off on it? ---

THE PROFESSOR: Oh, you're talking about the background there ---- just a minute (As if shouting orders to an attendant) Ed! Come on there with that calf, "Daisy!"

All right --- Line her up there ------ Camera!

McCLURE: On, I see, you are going to take her picture ----

THE PROFESSOR: Yes we are making a photographic record of the conformation of that calf and a large number of others, at different times duringtheir lives.

Memory, you know, sometimes fails us. But photographs won't let us forget.

You see we have the camera mounted here on the post. It's always the same distance from the calf or cow which we place against that background there. The squares ruled off on the board merely give us guide lines -- they make it easier to check up on the growth of the animal.

LOCKE: How often do you take the pictures, Professor?

THE PROFESSOR: We take the first one when she's about 10 days old. After that we take them monthly up to six months. Then at 9, 12, and 18 months of age. And we repeat in the early part of each lactation period ------ I have some pictures here we've already taken of this calf --- I'll just pass them around so you can all see them --- Keep them in order, Locke.

We also take the external body measurements of each heifer at 3, 6, 12 and 18 months of age, and again in the third month of lactation. These measurements include the height, width, depth, and circumference of the animal at different points. From these measurements a contour or cross-section diagram is prepared which records on paper the exact outline of the body at any point selected and at any stage of development -----

McCLURE: Professor! -----

THE PROFESSOR: Well! --- What's the trouble, McClure?

McCLURE: Isn't there something wrong with these photgraphs --- In one picture here the calf has a sloping rump -- and in the other it's straight. Is it the same calf?-- or is it the fault of the camera?

THE PROFESSOR: It's the same calf all right-- and the pictures were taken in just the same way. Dairy-cattle breeders don't think much of sloping rump --- some of them say it's associated with tilted udders.

Those photographs you have there show that dairy type or conformation is subject to radical and rather sudden changes; without apparent cause, either. From our photographic records we know that an animal may have a rump that is sloping at one time and straight at another. The change may go either way and then be reversed -- all in the space of a few months.

Just what causes this condition and its relation to development, shape of udder, breeding peculiarities, and producing capacity are now being studied.

LOCKE: Professor, last week you told us that some experiments were being made in checking up the relationship of a cow's conformation with the size of her heart and lungs. What has been found out about that?

THE PROFESSOR: That work was done in cooperation with large packing houses. The cows were selected as they were brought in the yards. They were measured up in the way I mentioned awhile ago. Then all their internal organs and many of their parts were weighed or measured as they went through the slaughtering plant.

This work has shown that there is a relatively close relationship between the depth of the chest and the weight of the heart and lungs. But the relationship between width of chest and weight of heart and lungs is relatively small.

LOCKE: Then the outside depth of chest is much more important than the outside width of chest, as an indicator of the weight of the heart and lungs?

THE PROFESSOR: Yes. And it's interesting to note that while the depth of the chest didn't vary but 32 per cent in the more than 300 cows handled in this way and the circumference of the chest didn't vary but 30 per cent, the weight of the blood varied 216 per cent and the weight of the lungs varied 315 per cent -- ranging from 3 to 13 pounds.

McCLURE: How about the relationship of the size of the heart and lungs to producing capacity?

THE PROFESSOR: We didn't have the production records of those cows -- so we couldn't tell anything about that ---

However, whenever we remove a cow from the herd of the Bureau of Dairy Industry we slaughter it and study its internal anatomy in detail. Thirteen of the State colleges and experiment stations are following the same plan in their herds. Already we have handled more than 110 cows. And we know the production of each. When we have handled enough that way, we will be able to answer your question. We will not only know the relation of outside conformation to internal anatomy but the relation of internal anatomy to producing capacity.

In other words, we will have a stronger scientific basis for selecting high-producing cows according to type.

But just to show you how the size of organs vary, ------

The Pennsylvania State College, which is one of the co-operators in this work, recently killed two cows of the same breed. They were within a few pounds of the same weight, almost identical in measurements, and of about the same producing capacity. One, however, had 129 feet of intestines while the other had 212 feet. Another cow recently salughtered had an intestinal tract of 244 feet in length.

McCLURE: A big udder is necessary for high production, isn't it? What did they find out about it?

THE PROFESSOR: The importance of the udder is a question about which opinions vary a good deal. But it's another of the questions for which we are now seeking the true answer. Its development from birth to the age of first calving, the changes which take place during its secreting stages, its gross structure and its microscopic structure are all being carefully

studied in relation to breeding and producing capacity --------

So you see there is a lot for us yet to learn about dairy cattle type -- as well as breeding ---

However, during the next few weeks at this period we are going to turn our attention to dairy products. Next week we will take up the preparation of cream for butter.

###

UNITED STATES DEPARTMENT OF AGRICULTURE — Radio Service — OFFICE OF INFORMATION

PROGRAM..... RELEASE.....

U. S. RADIO FARM SCHOOL. First Mon.Mar.21.

9 375 m

NOT FOR PUBLICATION

SHORT COURSE: Livestock Equipment.

LECTURE NO.1: Fences for Livestock.

ANNOUNCEMENT: The U. S. Livestock Farm School, sponsored by the Department of Agriculture at Washington starts on its last four weeks lap this evening. Livestock equipment will be the general subject,--- The first discussion is about fences, and we're all going to take a little inspection trip with the radio professor.

* * * * * * *

(The characters speaking during this lecture are: The Professor himself; and Richards and Tarlton, members of the class.)

* * * * * * *

THE PROFESSOR: Here we are! --- Pile out, men! ----

I've brought this class out here to show you how to keep harmony in the neighborhood ------

You know the trouble poor fences can start. Many a squabble among neighbors has been caused by stock breaking down or getting thru a fence ---- isn't that right, Tarlton?

TARLTON: I'll say it is! --- And that's not half -- A lot of damage to gardens and crops on your own place can be caused the same way -----

RICHARDS: Did I tell you the tough luck I had last year. I started to raise my young pigs on new ground. Some of the old hogs got through the fence. The young pigs picked up worms from 'em and I had all my trouble for nothing ------

THE PROFESSOR: Well, I wanted you all to see how a first-class fence is built -- so you can keep down troubles like that --

TARLTON: By the way, Professor, what is the best wood to use for posts?

THE PROFESSOR: Red cedar, locust, white oak, catalpa, mulberry, and chestnut-- all make good durable posts. But you can make them last longer by treating them with creosote before you set them -----

RICHARDS: How about concrete and metal posts ----

THE PROFESSOR: They are good, too. But where timber is plentiful, wood posts are usually cheaper. Sometimes, however, it's best to use the more permanent

material, even though it does cost considerably more -----

I want you all to notice the fence row along this wire fence here -- you don't see any weeds in it, do you? Weeds you know hold in moisture. They make the postsmore liable to rot near the surface of the ground -----

Ah, here we are! That's the way to build a fence corner. Livestock soon try to get through a slack fence --- you have to stretch the wire and hold it taut. You can't do that unless the corner posts are set right ----

You notice the corner post here and the second post are set about 8 feet apart. They should be set deep, too. I understand these go down four feet deep. ---- That's necessary in most soils.

You see the horizontal brace there is notched into the corner and second posts about 8 inches below the top. And the two posts are drawn together by that brace wire from the second post there at the brace to the bottom of the corner post. You see that brace wire is formed by twisting the two strands together. The two posts, the brace, and the brace wires form a unit. That gives the greatest strength for resisting the pull of the fence wires.

Now if you glance at those gate posts over there, you'll see that they are also firmly braced and deeply set. Gate posts are quite as important as corner posts.--- You should keep the width and weight of the gate in mind when you're setting up gate posts. You all know that a farm gate that is not well made and well hung is a source of constant trouble.

TARLTON: Professor, the posts for this fence are set about 12 feet apart. You don't need them that close together for all kinds of livestock, do you?

THE PROFESSOR: No. This fence is hog-tight. And hogs need the closest spacing of posts. Sheep may have the greatest spacing. For cattle and horses, the posts may be set about a rod apart, though horses need a somewhat stronger fence than cattle.

In this fence, you see, you have woven wire 26 inches high. That makes a satisfactory fence for hogs. Then, you see, about 6 inches above the woven wire you have a strand of barbed wire and then a couple more strands of barbed wire above that. The barbed wire is for the other kinds of livestock.

RICHARDS: Professor, there's a strand of barbed wire beneath the woven wire ---- about an inch from the ground.

THE PROFESSOR: Certainly, Richards, that's an extra precaution to keep the hogs from rooting under, though it's not always used.

RICHARDS: How many strands of barbed wire are best for a fence just for horses or cattle?

THE PROFESSOR: You'd need four strands in that case. You could place the bottom wire 18 inches from the ground, the second wire 9 inches above the first, the third wire 11 inches above the second, and the top wire 13 inches above the third. That would give you a fence 4½ feet high.

TARLTON: How would you build a fence to keep out sheep-killing dogs?

THE PROFESSOR: Where that's necessary, sheep owners often use a 56 inch woven wire, with a barbed wire carried parallel to the top of the woven wire at the end of offsets 5 or 6 inches long --- fastened to the top of the posts. The top wire, of course, should be on the outside of the pasture.

Now, Jameson, if you fellows will sight along this fence --- you'll see that these posts are set in a straight line. That's very important. When the posts are not in a straight line there is a constant strain on the ones that are out of line. When they are pulled toward the fence line, the wires become loose.

Now if you'll each examine the stapling of the wire on this post, you'll see how it should be done. You'll notice it's snug -- but not tight. That allows the whole fence to take the strain when an animal pushes on the wires between two posts. The staples should be long enough to enter the solid wood of the posts. But they should not be so tight they prevent the slippping of the wire when contracting. If wires are stapled too tight --- they may break when they contract in cold weather.

RICHARDS: How long will a steel fence wire last, Professor?

THE PROFESSOR: That depends largely on the quality and thickness of the galvanizing.

But I want you all to remember that good-quality wire is of little value when the posts are broekn off. And good posts are of little value when the wire is rusted or broken. And neither the wire nor the line posts are of much value, if an end or corner gives way. You should be careful to watch the corners.

Next week we are going to take some other equipment; such as creeps and self feeders.

Are you all ready ------Let's go!

* * * * * *

UNITED STATES DEPARTMENT OF AGRICULTURE
Radio Service
OFFICE OF INFORMATION

U. S. RADIO FARM SCHOOL SECOND Mon. Mar. 21/27.

PROGRAM..... RELEASE.....

(NOT FOR PUBLICATION)

SHORT COURSE: Work Horses and Mules.

LECTURE No.1: Animal and Mechanical Power.

ANNOUNCEMENT: For the next four weeks at this period on the U. S. Farm School the radio schoolmaster will discuss horses and mules and this evening he's going to answer that often asked question. Which is the most practical on the farm, horses or tractors?

---ooOoo---

(The characters speaking during this lecture are: The Professor himself; and Brewster and Holman, members of the class.)

BREWSTER: Look out the window there, Professor -----

THE PROFESSOR: What is it, Brewster? ---

BREWSTER: You said this was going to be a course on horses and mules, didn't you?

THE PROFESSOR: Yes -- What of it?

BREWSTER: Look at those cars --- It looks as though all the members of the class came in automobiles -- there's not a horse among 'em --- I guess it will be that way on the farm pretty soon ---

HOLMAN: Huh --- Don't you ever think it --- You've got to have horses on the farm --- and they're better'n tractors.

BREWSTER: Aw! How you get that way, Holman! Tractors have got it all over horses -----

THE PROFESSOR: Gentlemen!--- None of that, gentlemen! Get to your seats --- (Raps on desk as if for order) Attention, class!

Holman and Brewster, here, have started an argument --- We'll just let them carry it on --- for the benefit of the whole class -------- Now then, Holman, I want you to tell us what you think are the advantages of using horses to do farm work ----

HOLMAN: Well, in the first place, they don't cost nearly as much ---- You don't have to tie up as much money in them as you do in tractors --- and you can do your plowing and hauling with 'em cheaper -----

Then, on top of that, they can eat home-grown feed. You don't have to put out cash for feeding 'em --------

BREWSTER: Yes-s, and horses eat their heads off when they're not working, too.

THE PROFESSOR: Just a minute, Brewster. You'll have a chance to talk later. Go ahead, Holman. What other advantages do you see in using horse instead of mechanical power?

HOLMAN: Well, instead of having to buy a new tractor to replace a worn-out one, you can raise your own colts for replacements.

THE PROFESSOR: Yes.

HOLMAN: And you can add horses to a hitch to suit the job you're doing.

THE PROFESSOR: Yes. Your units are more adjustable. Horses do give you more flexibility of power -----

HOLMAN: Not only that, they give you reserve power in emergencies. Horses don't use near all their power in doing most their work. Horses are reliable, too. They can usually do their work without stopping or breaking down----

But that's not the best reason for using horses --- You can use horses where a tractor can't go. They don't have to have the land lying a certain way -- or nice and level for 'em and just the right kind of soil ---

I'm for the horse everytime. I like my horses -- they've been my best friends ----

THE PROFESSOR: All right, now, Brewster -- what is your answer to his argument?

BREWSTER: I like horses just as much as he does --- maybe a lot more -- Because he knows, as well as I do, that horses get tired easily in hot weather --- but you can't tire a tractor with a little sunshine. If he thought so much of horses, he'd use a machine to save them in hot weather.

And not only that but it takes a good deal more time to take proper care of horses than it does to look after a tractor --- and when the tractor's resting it's not eating up fuel either.

THE PROFESSOR: Are those the chief advantages of mechanical power as you see them?

BREWSTER: Oh, no, sir! The big advantage is that you can work them right on through without stopping when you've got a big job stacked up on you. You don't have to give 'em time out to rest ---- and what's more they can do more work in the same time than horses --- and you can use them for belt work, too.

THE PROFESSOR: What do you say to that, Holman?

HOLMAN: That's true --- but you can't get away from the facts that the first cost and upkeep of mechanical power is high compared to horses. You have to put out cash for oil and fuel and repairs -- and the machine may be out of order when you need it most.

Then you have to use the tractor for either heavy or light operations --- you've got to be expert in running the thing to keep it in good mechanical order and if it's heavy it'll pack down the soil ---- Isn't that right, Professor?

THE PROFESSOR: Yes. You're both right.

BREWSTER: But what do you say about it, Professor?

THE PROFESSOR: There's no denying there's a place for mechanical power on some farms. The kind of power you should use depends largely on the type and size of your farm, the organization of your farm, and the labor you have available. The Department of Agriculture has made surveys which indicate that horses furnish the cheapest power for most of the drawbar operations on the farm -----

HOLMAN: What did I tell you, Brewster! -----

THE PROFESSOR: But other factors than economy of operation are often involved which make the tractor a desirable piece of equipment on many farms.

On level lands, where most of the fields are large, tractors will do work practically as well as horses. And it is often more practical to use them, even though horses would do the work more cheaply.

But it's often impossible to use tractors on hilly lands. I wouldn't recommend their use in such sections.

However, in the final analysis, the choice of power is up to you farmers yourselves. Each one of you should give some thought to this subject before you choose the kind of power to meet your conditions.

But next week, we are going to hitch this course up to the horses and mules.

# # # # #

UNITED STATES DEPARTMENT OF AGRICULTURE — Radio Service — OFFICE OF INFORMATION

U. S. RADIO FARM SCHOOL First RELEASE Wed. Mar. 23.

PROGRAM

NOT FOR PUBLICATION

SHORT COURSE: Poultry Brooding and Rearing.

LECTURE NO.1: Brooding With Hens

ANNOUNCEMENT: For the next 8 weeks on the Wednesday evening U. S. Poultry Farm School Uncle Sam's spokesman is going to discuss Poultry Brooding and Rearing. These 216 lessons are mailed free to all who request enrollment. Brooding with Hens is the first subject this evening.

* * * * * * *

(The characters speaking during this lecture are: The Professor himself, and Brant and Parker, members of the class.)

* * * * * * *

(Three or four raps -- as if on desk)

THE PROFESSOR: Let's have order in the classroom! -------

Johnson! --- That applies to you and Parker, too. In fact, you back-yard poultry keepers should be especially attentive.

We are going to talk about the simplest and easiest way to raise a small number of chickens. ---------

Of course, you men who expect to raise 250 or more chickens, at one time --- or those of you who keep only Leghorns or other nonsitting breeds --- you should use artificial brooders ------

But those of you who have small flocks may well use hens -- as a hen can look after only a small flock -- the chicks usually develop into very good chicks -----

BRANDT: Professor! --------

THE PROFESSOR: Well --- Brandt? --------

BRANDT: How many chicks can one hen take good care of?

THE PROFESSOR: Well, hens will successfully brood 10 to 15 chicks early in the season, and 15 to 20 in warm weather ---- depending on the size of the hen.

You all know, I take it, that sitting hens should be confined to slightly darkened nests at hatching time. They should not be disturbed unless necessary for the safety of the chicks. And, of course, you appreciate the importance of applying sodium fluoride to sitting hens before the chicks

are hatched -- to kill the lice --------

BRANDT: Professor, I've been told a dozen times to use a few pinches of sodium fluoride on the hens ---- but that's pretty indefinite. How much do you put on and where do you put it?

THE PROFESSOR: You should give the hen three pinches of sodium fluoride, One on the head and neck, one on the back, and one below the vent. For small chicks you can use two very small pinches to each chick. Distribute one of the pinches on the neck, top of the head, and throat, and the other on the back and below the vent. Give the treatment while the chicks are active and don't let them hover for some time, so that the free powder will be shaken off. But never use sodium fluoride on chicks before they are 1 week old ---- it's not safe.

BRANDT: Should the newly hatched chicks be fed?

THE PROFESSOR: Certainly not!--- but you should feed the hen as soon as possible after the eggs are hatched. Feeding tends to keep her quiet. Otherwise, she may leave the nest.

BRANDT: How long should the hen stay on the nest after the chicks are hatched?

THE PROFESSOR: In most cases, it's best for the hen to stay on the nest at at least 24 hours after the hatching is over.

And remember, too, that the hen should be kept in the coop or in a small yard attached to the coop until the chickens are weaned ----(As if interrupted) Well --- Parker?

PARKER: What's the idea of that, Professor?

THE PROFESSOR: If you let the hens out on free range to forage for themselves and their chicks, they often take the chicks through wet grass. The chicks may become chilled and die as the result. The feed they get goes to keep them warm, whereas feed eaten by those with a hen that is confined produces more rapid growth -- because the chicks don't get as much exercise.

Then, too, in most broods there are one or two chicks that are not so strong as the others. If the hen is allowed free range, the weaker ones often get behind and out of hearing of the hen's cluck. In most cases, that means the loss of these chicks due to becoming chilled. And even when the hens are kept confined, you often have to catch the chickens and put them in their coops during sudden storms, as they are likely to huddle in some hole or corner where they get chilled or drowned. You must keep them growing constantly --- if you are to get the best results. Chickens never recover entirely from the effects of checks in their growth even for a short period.

PARKER: What's the best thing to do in case the hen steps on the chicks or picks at them?

THE PROFESSOR: In that case, you should take them out of the nest as soon as they are dry. Put them in a basket lined with flannel, or some other warm material, and keep them warm until all the eggs are hatched. Or you might just put them under a quieter hen whose eggs are hatching at the same time. In many cases the broods of chicks hatched by two hens may be combined and raised under one hen.

You should remember, however, that it is best to give a hen chicks of the same color and age as those already with her. Otherwise, she will often pick the later arrivals. It's best, too, to make the transfer at night. (As if interrupted) Well, Brandt?

BRANDT: What would you advise to keep down mites in the brood coops.

THE PROFESSOR: Well, you should clean the coop at least once a week. If you find mites, you should spray with kerosene oil, crude petroleum, or carbolineum -----Make sure that the spray reaches all the cracks and crevices where the mites may be hiding.

BRANDT: Each hen should have a separate coop, shouldn't she?

THE PROFESSOR: By all means. And if you have severl broods, you should place the coops some distance apart on well-drained soil where the grass is fairly short.

But each week you should move the coops to fresh ground --- preferably where there is new grass. As you all know, you need shade in rearing chickens ---especially in warm weather -- so the coops should be placed in the shade whenever possible. A cornfield makes a fine fange. In the cornfield, the young chickens can have plenty of shade and fresh ground to run on most of the time and can also pick up good feed in the form of bugs and worms.

Now then, next week, we take up the question of the management of artificial brooders.

* * * * * * *

UNITED STATES DEPARTMENT OF AGRICULTURE — Radio Service — OFFICE OF INFORMATION

PROGRAM U. S. RADIO FARM SCHOOL. Second RELEASE Wed., Mar. 23.

SHORT COURSE: Spring Problems in Poultry Management.

LECTURE NO. 1: Feeding the Layers.

MAR 1

ANNOUNCEMENT: The U. S. Poultry Farm School starts this evening, a new course on spring problems in Poultry management which will continue for the next 8 weeks. The first lesson is on Feeding the Spring Layers. Already Mr. Schoolmaster.

(The characters speaking during this lecture are: The Professor himself; and Tate and Kenney, members of the class.)

**********

(Four or five raps -- as if on desk)

THE PROFESSOR: The class will be in order! ----

As you all know, well-balanced, palatable feeds are necessary for good egg production. It may cost more to give your chickens a good ration instead of a poor one. But the added cost will be repaid many times by the extra eggs produced.

Now then, Tate, suppose you tell us what we should have in a good ration ---

TATE: Well, you should have enough protein, and vitamins, and minerals, and carbohydrates in the right proportions.

THE PROFESSOR: Yes, but that doesn't tell us a great deal. Take proteins, for instance. How would you supply the protein?

TATE: Meat scraps, fish meal and milk have protein in them. They're good for feeding poultry.

THE PROFESSOR: Yes. The vegetable proteins, such as gluten meal, soy-bean meal and cottonseed meal may also be used ---- but they're not so good as the animal proteins and they must be supplemented with minerals ------

(As if interrupted) What is it, Kenney? Did you have a question? ------

KENNEY: Would laying hens get enough minerals in a ration made up of a big per cent of yellow corn and yellow corn meal and a moderate quantity of middlings and bran supplemented with green feed, milk, and lime?

THE PROFESSOR: Usually they would. But it's important that they also get the benefit of direct sunshine and a constant supply of oyster shell or limestone grit. Minerals are well supplied through the bone meal, limestone and oyster shell, meat scrap, fish meal and bran. (As if interrupted) Yes?

TATE: How about the carbohydrates?

THE PROFESSOR: That's something you don't have to bother much about. The grains are largely composed of carbohydrates --- so they are well supplied in poultry rations ------

By the way, I notice that some of you are not taking notes. You'd better get your pencil and paper ready. You may want to take down something and not be ready -----

I hope that I don't have to tell this class that egg-laying rations are made up of a scratch feed and a mash containing animal and mineral feed. Or that you should always provide your chickens with green feed, limestone grit, oyster shell, and plenty of water. Green feeds are especially important. They should be supplied freely.

Kenney -- suppose you tell us what green feeds you give your chickens?

KENNEY: When I can, I turn them out on grass or alfalfa range ---

THE PROFESSOR: What do you do when that's not available?

KENNEY: I give 'em germinated oats, cabbage, cut clover or alfalfa hay, or kale -------

TATE: How about alfalfa meal in the mash, Professor?

KENNEY: Well, it's helpful -- but you shouldn't rely on it altogether. You should supply other green feed.

KENNEY: Professor, what's the best ration for all conditions?

THE PROFESSOR: There is no one best ration ----- Some of the grains can be fed interchangeably -- That's a matter of price or the kind you have available ------ But get your pencil, I'll give you a couple of rations that will produce good results. Understand, however, they are not the only ones. You can make others by using similar feeds which may be cheaper for you or more readily available.

We'll make up these rations on the basis of 100 parts by weight. First we'll take the mash. ----- Are you ready --- (SLOWLY) The first thing we'll put in our mash will be yellow corn meal. It should form 40 parts by weight, of the mash. Meat scrap 20 parts; ground oats, 10 parts; middlings

10 parts; bran 10 parts; alfalfa meal 5 parts; bone meal 2 parts; ground limestone 2 parts; and salt 1 part.

With that mash, you might feed a scratch mixture like this (SLOWLY) Yellow cracked corn 50 parts by weight; wheat 25 parts by weight; and heavy oats 25 parts by weight.

You can supplement these rations with milk to increase egg production -- using either semi-solid or ordinary buttermilk or skim milk.

Now here's another ration that you might well use. The mash has 40 parts yellow corn meal just as the other I just gave you. (SLOWLY) Then it has middlings 20 parts; bran 10 parts; meat scrap 10 parts; fish meal 7 parts; alfalfa meal 5 parts; dried milk 3 parts; bone meal 2 parts; ground limestone 2 parts; and salt 1 part.

With that you might use a scratch mixture made up of 40 parts cracked corn; 30 parts wheat; and 30 parts heavy oats.

You can supplement this ration with milk just as we suggested for the other ------ (As if interrupted) Well, ------ What is it? -----

TATE: How about using commercial feeds that are already mixed?

THE PROFESSOR: Well, the value of any commercial feed, of course, depends on its composition -- and the kinds and quality of the grains used in it. Most of the commercial feeds of both scratch grains and mashes are of good quality. They can be used to advantage. When only a few hens are kept it is simpler to use such mixed feeds. But if you have a big flock, it's usually cheaper to mix your own -- Or if you run a general farm, it's cheaper to mix your own because part of the ration is home grown.

TATE: You'd feed more mash in the spring and summer than you would in winter, woulen't you?

THE PROFESSOR: Yes. During the winter, we usually feed equal parts of scratch feed and mash. In the late spring and summer, however, we feed about two-thirds mash and one-third scratch feed. On the other hand, in the fall the pullets will eat about two-thirds scratch feed and one-third mash.

You see to provide a properly balanced ration the average feed for the year should be half scratch feed and half mash. But we regulate the proportions of each according to the condition of the hens and their egg production. We feed the scratch mixture more freely in the fall, to keep the pullets in good flesh.

The scratch mixture should be fed regularly twice a day; giving about one-third of the grain early in the morning and the rest in the

afternoon. You can feed the mash dry and keep it in an open hopper before the hens all the time.

Next week we will talk about removing the roosters from the laying flock.

###

UNITED STATES DEPARTMENT OF AGRICULTURE
Radio Service
OFFICE OF INFORMATION

PROGRAM..... RELEASE.....

U. S. RADIO FARM SCHOOL FIRST Fri. Mar 25.

1
M3FS

SHORT COURCE: Dairy Cattle Diseases.

LECTURE No. 1: Eradicating Tuberculosis.

ANNOUNCEMENT: The U. S. Dairy Farm School starts another four weeks series, which will be the last this spring. The general discussion will be about Dairy Cattle diseases and the lesson this evening is on the Eradication of Tuberculosis.

(The characters speaking during this lecture are: The Doctor himself; and Hudson and Dosker, members of the class.)

*******

(Three or four sharp claps of the hands -- as if for attention)

THE DOCTOR: A little quiet in the class-room! -----

We are now beginning a short course in dairy cattle diseases.

First, we'll take up tuberculosis. We've been hearing a good deal about that in the last few years. As you all know, we are now engaged in a campaign to completely eradicate this plague from the dairy herds of this country. As tuberculosis is a disease that milk cows may share with human beings if we are not careful, it's up to us to get rid of it.

In a class like this, I need not emphasize the importance of tuberculosis. But I do want you dairy cattle owners to keep ever in your minds - the different ways it may be spread in your herd. That will help you to protect your healthy animals from it.

The contact of healthy animals is without question the most common method of introducing the disease into clean herds. You should always be certain that the animals you buy are free from tuberculosis. You can buy them from herds which are known to be free or from herds under supervision for the eradication of the plague.

Besides the dangers of infected cows mingling with the healthy ones, there are, however, a number of other sources. The germs may enter a clean herd in the feed or water supply. Calves contract tuberculosis by nursing, even for a short time, cows whose udders are affected. They also get it by drinking raw milk from diseased cattle or by drinking unpasteurized milk obtained from a creamery or skimming station. If you do not know that the milk for the calves is from tuberculosis free cattle --- you should pasteurize it before you let the calves have it. (As if interrupted) What is it, Dosker?

DOSKER: How can you tell when a cow has tuberculosis?

THE DOCTOR: Well, it's rather hard to tell by any outward appearance. Even the most noticeable abnormal conditions which sometimes go with the disease -- are not always conclusive symptoms. The only really dependable method of knowing that tuberculosis is present is by using the tuberculin test.

DOSKER: Just how does that tuberculin test work?

THE DOCTOR: As commonly conducted, it consists of injecting a small quantity of tuberculin under the skin of the animal being tested. If the animal has tuberculosis, there will be a swelling near the site of the injection or the temperature of the animal will go up.

When tuberculin is injected into cattle free of tuberculosis, these effects do not follow.

DOSKER: Can just anybody make that test?

THE DOCTOR: By no means, Dosker. It's important that it be made by an experienced and properly trained veterinarian.

Just to give you some idea of what's been done along that line, however, here are the test figures. Since the Federal government began its cooperative tuberculosis-eradication campaign in 1917, more than 29 million tuberculin tests have been applied to cattle. Over 1 million of those cattle tested have shown signs of the disease, have been condemned, and slaughtered.

The public is becoming more and more in favor of tuberculin testing as a protection to the human health. A survey made last year showed that 874 cities and towns in the United States have passed ordinances requiring that milk used for human consumption must come from tuberculin-tested cows --- (As if interrupted) Yes, -- Hudson?

HUDSON: Doctor, I understand that if your herd is found free from tuberculosis two years straight, you can get a certificate which let's you ship cattle interstate without any other tuberculin testing for a year. Is that true?

THE DOCTOR: Yes, that's what is known as the accredited-herd plan. If your cattle are free from tuberculosis on two successive annual tests, your herd is placed on an honor roll. The State and Federal Governments give you a certificate, as you say. ---

Then, you understand, there is also what is known as the area plan of eradicating tuberculosis. According to that plan, a circumscribed area, usually a county, is used as a unit in the work. Each county generally pays part of the expense in the testing and part of the cost in cleaning and disinfecting the premises.

When not more than one-half of 1 per cent of the cattle in a given area are found to be affected with tuberculosis, such an area is declared to be a "modified accredited area". Cattle from such area may be moved interstate without further tuberculin test. At several of the larger markets a premium of 10 cents a hundred pounds is paid for hogs from such areas.

The area plan has proved the most popular method of fighting tuberculosis. Over three-fourths of the cattle tested last year, were tested under this plan.

HUDSON: It costs a lot less to fight tuberculosis in the early stages, doesn't it?

THE DOCTOR: Certainly -- Very much less.

HUDSON: How about badly infected herds? --- Is it practical to get rid of tuberculosis in them?

THE DOCTOR: Well, of course, the sooner you check the disease the better. But there are records of many herds in which three-fourths of the animals were affected with tuberculosis. Eventually they were freed from it and afterwards kept in a healthy condition. -------

That will do for the present. Next week I want you to all come prepared to discuss milk fever.

###

UNITED STATES DEPARTMENT OF AGRICULTURE — Radio Service — OFFICE OF INFORMATION

U. S. RADIO FARM SCHOOL. SECOND Fri. Mar. 25.

PROGRAM (NOT FOR PUBLICATION) RELEASE

SHORT COURSE: Dairy Products.

LECTURE No.1: Preparation and Churning of Cream for Butter.

ANNOUNCEMENT: The second series of lessons in the U. S. Dairy Farm School will deal with Dairy Products during the remaining four weeks. This evening the topic for discussion by the Radio Professor who represents the U. S. Bureau of Dairy Industry, is Preparation and Churning of Cream for Butter.

(The characters speaking during this lecture are: The Professor himself; and Telford and Caffrey, members of the class.)

---ooOoo---

(Four or five raps -- as if on desk)

THE PROFESSOR: All right. Come to order, please! ----

I take it, that you all have come to class to find out how to make high-quality butter on the farm ----

Most of you have probably been making butter for years. Some of you perhaps not so long. But you all have your problems. I thought once of telling you how it is made on a model farm ---- but maybe we wouldn't reach your particular problem that way.

As this is your class -- we want you to get the most out of it -- so I'm just going to turn it over to you. If any of you have any questions about butter making, speak up and we'll see what we can do toward answering them ---------

All right, what is it, Telford?

TELFORD: Is it all right to churn milk instead of cream to make butter?

THE PROFESSOR: It is better to churn the cream. If you churn milk you lose a great deal of the butterfat in the buttermilk. Not only that, but you have to have a high churning temperature which injures the quality of the butter. It is also likely to put too much moisture in the butter.

CAFFREY: Professor, just what is the proper temperature for churning?

THE PROFESSOR: Unfortunately there is no one temperature that is right for all times of the year and under all conditions. The proper churning temperature is that which makes the little grains of butter firm -- but not hard. Churning usually takes about 30 minutes at that temperature.

CAFFREY: Isn't that an awful long time to churn. - Sometimes we get butter in about 10 minutes.

THE PROFESSOR: Well, Caffrey, you want to remember when you do that, you may be losing five times as much butterfat as if you churned 30 minutes. And not only that, you will leave too much buttermilk in the butter -- the butter will be soft and salvy instead of firm and waxy.

As you know, when butter comes soft it is liable to form in lumps instead of remaining in little grains. You can't get the buttermilk out of the lumps and as a result the butter doesn't keep well -----

CAFFREY: How about these churns that get butter in a few minutes.

THE PROFESSOR: They produce the same bad results we just mentioned. There is no short cut in churning.

CAFFREY: Well, how can you tell what temperature to use?

THE PROFESSOR: That's easy, if you use a thermometer in the cream at churning time. In the summer, it usually takes from 52 degrees to 60 degrees Fahrenheit to have the little grains of butter firm. In the winter, it usually takes from 58 to 66 degrees. In the spring, after the cows have been turned out to pasture, if you use the same temperature you do in winter, the butter will probably come in much shorter time and will be quite soft. In that case, all you have to do is use a lower temperature at the next churning. (As if interrupted) Well? ---

TELFORD: How often should you churn? -- Out at our place, we usually accumulate several skimmings for a churning.

THE PROFESSOR: It's best to churn at least twice a week. If you hold the cream too long, it develops a stale flavor -- even if it doesn't get too sour. You know, when cream becomes too sour it not only gives the butter a sour, overripe cream flavor but it injures the keeping qualities. In saving cream for butter, you should cool it to 50 degrees as soon as it is separated --- Just put the can in cold water and stir the cream occasionally with a stirring rod -- instead of spoon or ladle. And cool each skimming before you add it to the previous skimmings; as adding warm cream to older cream hastens souring ------

TELFORD: How about ripening cream that's been kept sweet?

THE PROFESSOR: Well, about 12 hours before churning time, you should warm it to a temperature of 65 to 75 degrees, or to a temperature that will cause it to sour properly about 2 hours before you want to churn it. You can do that conveniently by setting the can of cream in a vessel of warm water. Stir the cream so it will be warmed to the same temperature throughout. And use a thermometer -- it's important to use a definite temperature. In the summer, cream will usually ripen overnight at about 65 degrees Fahrenheit. In the winter, it takes 75 degrees to sour the cream in that length of time.

As soon as it has thickened and is mildly sour, it is the proper ripeness for churning. You should then cool it to churning temperature and hold it there for at least two hours before churning.

TELFORD: In using a barrel churn, how fast would you turn it?

THE PROFESSOR: Oh, about 60 times a minute. Anyway, the speed that produces the greatest concussion ---

TELFORD: How do you tell that -- by the sound of the swashing of the cream in the churn?

THE PROFESSOR: Of course. After a few turns, you should stop the churn with the outlet up and then take out the cork for a few seconds to let out the gas. Do that two or three times, or until there is no more gas given off.

Any of you who have ever done any churning recall that when churning begins, the cream produces a very liquid sound and the glass in the churn is evenly covered with cream. When churning is nearly done, there is a noticeable difference in the sound. On the glass, a thick, mushy mass appears and then occasionally breaks away, leaving the glass clear. That is the point, where the little grains of butter are just forming. The cream has become thick and finely granular, like corn-meal mush, with buttermilk separating slightly from the tiny grains.

That's the stage of churning you must watch closely. You should turn the churn a few times. Then stop it and examine the butter -- to prevent overchurning. When the little grains of butter are the size of wheat, the churning is completed.

Drain off the buttermilk through the hole in the bottom of the churn. Use a strainer so you can catch the grains of butter which may come out with the butter-milk.

CAFFREY: Professor, I've churned cream for hours at a time without getting butter. What would you say is the cause of that kind of thing?

THE PROFESSOR: Let's let that question go over until next week. Probably when you have thought over it, you'll have the answer. There are several things it may be due to, however.

# # # # # # #

UNITED STATES DEPARTMENT OF AGRICULTURE — Radio Service — OFFICE OF INFORMATION

PROGRAM U. S. RADIO FARM SCHOOL Second RELEASE Mon. Mar. 28.

SHORT COURSE: Work Horses and Mules

LECTURE No. 2: Selection and Training.

ANNOUNCEMENT: The next lesson in the United States Livestock Farm School this evening deals with some of the points in selecting and training work horses and mules. This is the second of a series of four lessons on problems relating to mules and work horses. Other lectures which have been previously broadcast are included in the printed booklets prepared by the United States Department of Agriculture. If you have not already done so, just write to this station for these talks and they will be sent to you free of charge.

(The characters speaking during this lecture are: The Professor himself; and Holman and McKee, members of the class.)

**********

McKEE: Say, Holman ----You're a good horseman --- what's the best kind of mules and work horses to raise on the farm?

HOLMAN: Raise the big ones. They'll not only pay in doing the work, but they'll bring the best prices when you want to sell ----

I'll tell you, McKee, the only classes I'd consider, are good draft horses and draft and sugar mules.

McKEE: What breed of horses?

HOLMAN: Oh, any kind you like --- but I'd advise you to raise the same breed most of the other fellows around you do. Buyers of any breed are likely to flock where they can find plenty of that breed.

McKEE: I'm new at this game ---- I suppose the brood mares should have the right conformation -- and they should be breeders and workers ---

HOLMAN: Yes, and you want them as near alike as possible. Then you can use them interchangeably in farm work or work them together when need be. Not only that, but then you have a better chance to raise a uniform crop of colts.

McKEE: I never thought of that ---- How about the stallion?

HOLMAN: He ought to be the same type or breed as your mares --- Don't use anything but a sound, purebred stallion -- one that hasn't any faults of conformation. I'll tell you it pays to look for good feet, clean flat bone, well-defined hocks, good disposition, and quality, and breed character-- no matter what breed he is.

I'd inquire about his prepotency, his show winnings, and his colts, too.

McKEE: What size should a draft horse be?

HOLMAN: A drafter should stand 16 hands 2 inches to 17 hands in height. His weight should be not less than 1,600 pounds. Heavier horses bring better prices ---- and they are more easily sold at any time of the year ----

McKEE: Which type of mule brings the best prices?

HOLMAN: Sugar mules ---

McKEE: How big do they grow?

HOLMAN: They weigh from 1,150 to 1,300 pounds and stand 16 hands high. They are always mare mules-----

(Three or four raps -- as if on desk)

Now, draft mules, stand 16 to 17½ hands and weight 1,200 to 1,600 pounds. The greatest demand for them is when they're from 5 to 8 years old--

(Three or four harder raps -- as if on desk)

McKEE: Sh-sh-sh-sh - shu-u! There's the Prof.

THE PROFESSOR: Today we will discuss the training of horses.

You all know, what a horse has once been taught to do he will nearly always do under similar conditions.

He should be trained so that he thinks there is no limit to his power to do the things required of him. And to believe that he has no power to do that which is against the wishes of his master.

His education is based on reward and punishment. The reward should immediately follow the act of obedience. The punishment, to be effective, must immediately follow the act of disobedience.

To train horses successfully, you must have patience, gentleness, and firmness. If you can't control your temper, you had better put the horse back in the stable until the next day --- (As if interrupted) Well?

McKEE: At what age should you break colts?

THE PROFESSOR: Well, you should begin his education as early as possible. It's a good idea to break the colt to lead before it is weaned. That'll make it easier to break him to harness when he's two or three years old.--- Now then Holman, suppose you tell the class how you break a colt ----

HOLMAN: Well, I tie the young colt to the mare's trace when she's being worked. That gets the cold used to general conditions and work noises.

THE PROFESSOR: That's a good plan.--- If you just keep it up for short intervals and until the colt is broken to lead. That's a good time, too, to get the colt used to having his feet handled and trimmed. You can save much future work and trouble by handling the colt when he's young. All right, what do you do after you break him to lead?

HOLMAN: I get him accustomed to harness. I use a "bitting harness"; you know -- and open bridle with snaffle bit, check and side reins, and surcingle with crupper.

I put that rigging on the colt -- leaving the side and check reins comparatively loose. Then I just turn him loose in a small paddock for an hour or so at a time.

THE PROFESSOR: Yes -----

HOLMAN: After a few days, I put the driving lines on. Then I have one of the men lead that colt around until he gets used to having me walk behind him holding the driving lines.

Then I send the man off and I drive the colt for an hour or so in the quiet paddock -- where he can't see other horses.

THE PROFESSOR: I suppose after the colt goes all right in the bitting rig, you substitute the work harness with breeching ----

HOLMAN: Yes, sir. Only I join the traces and breeching loosely. I gradually tighten them as the colt get's used to them. As soon as he goes well in the harness, he's ready to be hitched to the wagon.

McKEE: How about training him to work in double harness?

HOLMAN: In driving double, I use a broken gentle horse for a team mate --- preferably one that the colt knows.

I have an assistant stand quietly at his head while the colt is being hitched. Afterwards the assistant leads him with a strong rope until he becomes familiar with his surroundings.

In another lesson or two, I hitch the colt to a wagon with the assistant walking at the side with a guy rope. I just drive a short distance at a time and I start and stop often. I do all this in a big field, but after the colt gets to going well I take him out on a quiet road for a short drive.

THE PROFESSOR: That's just right, Holman. And you should always stop when the colt shows fear of some object. Let him look it over and never whip him or rush him by anything at which he is frightened. You can keep increasing the length of that daily drive until the colt is broken or you can use him in ordinary light work. (As if interrupted) Well?---

McKEE: Professor, I've got a horse that balks -- how can you train a colt to prevent that?

THE PROFESSOR: You should never ask a horse to do something that's impossible. If during the first year of his work a colt is hitched only to loads he can pull, he will develop into a good work horse. If he's overloaded a few times, he may develop balky habits.

Kindness is essential in training colts. But the ultimate value of a colt when grown depends not only on how he is broken and trained but on how he's fed and managed. But we'll talk some more about handling horses next week.

####

UNITED STATES DEPARTMENT OF AGRICULTURE
Radio Service
OFFICE OF INFORMATION

PROGRAM..... RELEASE.....

US RADIO FARM SCHOOL First Mon.Mar.28

NOT FOR PUBLICATION

SHORT COURSE: Livestock Equipment

LECTURE NO. 2: Creeps and Self-Feeders.

ANNOUNCEMENT: The U. S. Radio Farm School starts now with the Schoolmaster at his desk ready for action. His subject for the first lesson this evening is "Creeps and Self-Feeders." All right Professor--

* * * * * * *

(The characters speaking during this lecture are: The Professor himself; and Drake and Miller, members of the class.)

* * * * * * *

(Sound as of students snapping fingers to get attention.)

THE PROFESSOR: One at a time, please! --- One at a time!

I can't answer both of you at once.

Which of you had your hand up first? --- Drake or Miller? ----

Well -- if you are unable to decide --- We'll just take Miller first. What's your question? ----

MILLER: What design of self-feeder is best, Professor:

THE PROFESSOR: I wouldn't let that bother me----There is no one best design. Any arrangement should prove satisfactory -- if it has the essential features. You know what they are, don't you?

MILLER: It should have separate compartments for grain, and tankage or some other protein feed, and the mineral mixture --------

THE PROFESSOR: Yes. And the compartments should furnish dry storage for enough of those feeds to last a week or ten days ----- What else?

MILLER: It should have troughs on both sides of each compartment ------

THE PROFESSOR: Certainly --- and, of course, an adjustable feed flow which will automatically supply the troughs as the feed is eaten -----

Self-feeders are wonderful labor-saving devices. They save feed, too, and promote efficiency in feeding -------

DRAKE: Professor, the different compartment shouldn't be the same size, should they?

THE PROFESSOR: No. You should build them so they will empty and need refilling about the same time. The proportion of 3, 2, and 1 would be about right. That is, the grain compartment should be 3 times as big as the mineral mixture compartment. And the protein compartment should be twice as big as the mineral mixture compartment.

You should make your self-feeder strong --- and out of good material. Paint it well. Make the roof rain-proof and big enough to extend beyond the trough --- so it will protect the trough from the weather -------

MILLER: Jim Keith, out our way, builds his self-feeders on runners ----

THE PROFESSOR: That's a good idea ---- The runners will make it easy to move a self-feeder to a new location by just hitching a team of horses to it -----

Any of you who are not using self-feeders, I'd advise to use them. Letting hogs do their own choosing of grain, concentrated protein feed and mineral, on pasture or in the dry lot, has been demonstrated to be good practice. The hogs not only make satisfactory gains, but make the gains economically ----

MILLER: How about self-feeders for young pigs, Professor?

THE PROFESSOR: Recent tests have shown that sows and their litters may be put on self-feeders on pasture immediately from the farrowing house. You can keep the pigs on self-feeders from then on until they are finished for market.

In case you do that, however, you will have to keep out the sows and hand feed them at weaning time. That is, so the pigs alone can use the self-feeder during the few days necessary for weaning.

MILLER: How would you keep the sows away?

THE PROFESSOR: Why, just put the self-feeder in an enclosure; that is,in a "creep" which is built to let the pigs in but to keep the sows out.

MILLER: What would you feed the young pigs? - I mean put in the feeder-

THE PROFESSOR: It is good practice to allow them to begin eating solid food when they are about 3 weeks old. By that time they will eat almost any feed they can get hold of. But they especially enjoy cracking the kernels of shelled corn. You know, corn makes the most satisfactory addition to the mother's milk at that time. In a few days, the pigs begin to eat it regularly -----(As if interrupted) Well?

DRAKE: How about using self-feeders for other animals besides hogs and pigs?

THE PROFESSOR: Well, aside from their use for poultry, self-feeders are used almost exclusively for hogs. Other kinds of livestock have a tendency to over-eat from a self-feeder. You can't depend on them using hog-sense in balancing their rations -------

But, by the way, Drake, You wished to ask a question awhile ago. What was it you had on your mind?

DRAKE: I was just going to ask something about creeps.

THE PROFESSOR: What did you want to know about them?

DRAKE: How to build one.

THE PROFESSOR: Well, a creep may be conveniently built in the corner of the hog lot -----

DRAKE: With the hog-lot fence forming two of its sides?

THE PROFESSOR: That's the idea. You can make the other two sides with horizontal slats 1 inch thick and from 2 to 6 inches wide. Space the slats 2 inches apart.

DRAKE: How high would you make them?

THE PROFESSOR: About 2½ feet. I'd make the slat panels as long as the fence panel; so as to make a square inclosure. Eight by eight feet is a convenient size. Nail the slats on from the outside so large hogs can't push them off. And at the corner, where the slat panels join, you should drive down posts deep enough to make the panels secure and not likely to be lifted by the sow.

DRAKE: How high should the opening for the pigs be? Somebody told me low openings would cause the pigs to have low backs.

THE PROFESSOR: Yes. I'd make the opening into the creep too narrow for the older hogs rather than too low. The opening should be 8 inches wide and 18 inches high, so the pigs can pass through easily.

With a creep, when the pigs are 3 weeks old they can eat corn for supplementing the milk. When they are 5 weeks old you can put middlings and other feeds in the compartments of the self-feeder.

DRAKE: Creeps are used for other animals besides hogs, aren't they?

THE PROFESSOR: Yes. Although they are used most commonly for hogs. They can also be used for lambs, calves colts and other farm animals. The idea is just to provide a convenient way to let the young animals eat without being bothered by the older ones.----- (As if interrupted) Well, Miller?

MILLER: Professor, draw us a diagram of a creep and a self-feeder on the blackboard, will you?

THE PROFESSOR: I'll do even better than that (Sound as of writing on blackboard)-- Can you read that?

MILLER: Farmers' Bulletin 1-4-9-0 Hog-Lot Equipment.

THE PROFESSOR: Yes. Take that bulletin number 1490 down. It gives detailed plans for creeps, self-feeders, and other equipment. Just write the U. S. Department of Agriculture for that bulletin --- and they will send it to you free. It'll probably have some of the other equipment we'll mention next week. So you might get it and be prepared.

UNITED STATES DEPARTMENT OF AGRICULTURE — Radio Service — OFFICE OF INFORMATION

PROGRAM..... RELEASE.....

U. S. RADIO FARM SCHOOL SECOND Wed. Mar.29

1.9
9n3Fs

SHORT COURSE: Spring Problems in Poultry Management.

LECTURE No. 4: Producing Market Eggs.

ANNOUNCEMENT: Last week the poultry class of the United State Radio Farm School discussed the factors which make for quality in eggs. This evening, the Professor has promised to tell members of the class how to improve the quality of their hens' eggs. We are now in the schoolroom waiting for the Professor to arrive.

(The characters speaking during this lecture are: The Professor himself; and Coleman and Craddock, members of the class.)

**********

COLEMAN: Say, Craddock, let's cut this class ---- before the Prof. gets here.

CRADDOCK: Naw! -- I want to hear what he's going to say.

COLEMAN: You know about what he'll say. He said he was going to talk about improving the quality of eggs. I'll bet he just says a lot about grading.

CRADDOCK: I hope he does! ----- You know, Coleman, they're selling more eggs every year on grades.

COLEMAN: So they say. But I don't see what good that does.

CRADDOCK: Why, sure, it's good ---- It enables consumers to select what they really want. They're getting choosey these days.

COLEMAN: Yes. But how does that help us boys that are producing the eggs?

CRADDOCK: You get paid according to the quality of eggs you produce. This thing of selling on an ungraded basis puts all producers on the same level.

COLEMAN: Isn't that fair?

CRADLOCK: No, it's not. When I go to a lot of trouble to produce first-class eggs, I want to get paid for that kind. But if they're not buying on grade, I have to take a lower price because, maybe, you produce poor eggs. The producer of low-quality products causes lower prices for those who sell high quality products.

COLEMAN: Well, of course, I believe in eggs being good eggs. But they're getting too finicky about what they call the best eggs. Why, just the other day, I had a shipment of eggs discounted in price --- because they all didn't have white shells. What's the color of the shell got to do with making an egg good or not? How can I make hens lay eggs that are white?

(Three or four reps -- as if on desk)

THE PROFESSOR: The class will be in order! -----

As you have allprobably heard, a careful analysis has been made ---- of egg losses from all causes.

The results of that analysis show ---- that you farmers -- are responsible --- for about one-half the total loss.

That is to say, practically half the loss can be eliminated --- if you farmers -- will take proper care in the production and handling of eggs---- up to marketing time ------- (As if interrupted) Well, Craddock? ----

CRADDOCK: What's responsible for the other half the losses?

THE PROFESSOR: That's largely due to faulty methods of marketing ----- -------- But, as I was about to say, when I was interrupted, millions of dollars are lost to the poultry industry every year --- because you farmers place on the market eggs in which the embryos have started to develop.

----- As I told you before, the way to stop that loss is to remove the male birds from the breeding flocks as soon as the breeding season is over.

Now another factor affecting the quality of eggs -- before they reach the consumer -- is shrinkage. Shrinkage, you know, is caused by the evaporation of the watery content of the egg. The older the egg and the higher the temperature in which it is kept, the more the contents of the egg shrink and the larger the air cell becomes.

You poultrymen should, therefore, take every precaution to see that eggs are kept in reasonably cool places before they're marketed --- and to see that they are merketed regularly and as often as possible.

CRADDOCK: Would you candle all the eggs you market, Professor?

THE PROFESSOR: I certainly would. It's a good practice. Candling is a safeguard against such conditions as blood spots. And it's the way to make sure that you are not sending any stale eggs to market. It's one of the most efficient methods of learning the quality of eggs. (As if interrupted) Well?

COLEMAN: Professor, you said we ought to market eggs often. How often?

THE PROFESSOR: Preferably twice a week in warm weather. At least once a week at other times of the year. Never forget that an egg does not improve with age. The sooner you market it, the better.

CRADDOCK: Are there any ways we can improve the quality of eggs --- besides producing only infertile ones, keeping them in a cool place, and marketing them often?

THE PROFESSOR: Yes. There are various management practices -- that will probably enable you to improve the quality of your eggs. In the first place, your laying stock should be kept on clean land. The houses and nests should be kept clean at all times. And only clean eggs should be marketed. Dirty eggs not only look bad, but they sell less readily.

And not only must you get the eggs to market often, but you should get them out of the nests promptly. Remember that in warm weather, when the temperature is 80 degrees and above, the contents of the egg tend to evaporate rather fast --- and eggs will become stale quickly -- if they're left in the nests. The same is true if you let broody hens sit on either fertile or infertile eggs. And, of course, eggs should not be left exposed to the direct rays of the sun.

Then combined with candling, you should also grade your eggs according to size --- if you are producing enough of them to justify that. And you should give careful attention to color --- especially where white shelled eggs are being produced. Many White Leghorn breeders have had trouble about the color of the shells. In some flocks, the proportion of tinted eggs is relatively high. In some markets those tinted shells are discounted-

COLEMAN: That's my trouble, Professor, but how you going to get around it?

THE PROFESSOR: You can eliminate tinted-shelled eggs by careful selection of your breeding stock each year. The production of white-shelled eggs is largely a matter of breeding.

COLEMAN: Professor, there's abother thing I wanted to ask you about --- not about producing eggs for market -- but about preserving eggs for home use. What's the best time to do that?

THE PROFESSOR: Well, Coleman, suppose we let that go over until next week. Then we can go into it more fully.

UNITED STATES DEPARTMENT OF AGRICULTURE — Radio Service — OFFICE OF INFORMATION

PROGRAM U. S. RADIO FARM SCHOOL. FIRST RELEASE Wed. Mar. 30.

(NOT FOR PUBLICATION)

SHORT COURSE: Poultry Brooding and Rearing.

LECTURE No.2: Management of Artificial Brooders.

ANNOUNCEMENT: The United States Department of Agriculture's Poultry Farm School is about to begin its class on Brooding and Rearing Chickens. Last week, you recall, the lesson was about brooding with hens. This week it is to be about artificial brooders.

(The characters speaking during this lecture are: The Professor himself, and Rogers and Taylor, members of the class.)

---ooOoo---

(Three or four raps -- as if on desk)

THE PROFESSOR: The class will be in order! ---

ROGERS: Professor! ----

THE PROFESSOR: Yes? ---

ROGERS: What's the best kind of brooder?

THE PROFESSOR: Well, Rogers, you know better than to ask a question like that! That depends -- of course.----- How many chickens do you expect to raise?

ROGERS: Oh, say about 400 or more.

THE PROFESSOR: Well, stove brooders are particularly well adapted for raising that number annually. If you raise 400 chicks you will need two brooders -- one for the first hatch and another for the second.

In case you want to raise 800 chicks a year, four stove brooders will be enough. They are cheap to operate and they save a great deal of time in caring for the chicks.

Of course, you all understand, there are several systems of artificial brooding. There are lamp brooders, caring for from 25 to 100 chicks. There are electric brooders accomodating from 50 to 500 chicks. Then there are stove brooders. Some are coal stoves and others are kerosene or distillate oil stoves. They have a capacity varying from 200 to 1,000 chicks. There is also the hot-water pipe system with unlimited capacity. If you can, you should investigate the brooding equipment being used successfully by poultrymen or farmers in your section.

But whatever system you use, you should be sure to use reliable equipment. The selection of the brooder is very important.

A cheap, unreliable brooder may easily ruin many broods of good chicks. The few dollars more - that you may have to pay for a reliable make -- will be saved the first brooding season ---- You'll have fewer chicks die and better growth of those that live.

ROGERS: What's the chief thing you'd look for in a brooder stove, Professor?

THE PROFESSOR: Well, I'd make sure it was made out of good material ----- I'd be especially careful about the thermostat. I'd see that it was well made. A poorly made thermostat - gets out of order easily.

ROGERS: You mean the thing that regulates the heat? --

THE PROFESSOR: Yes. The heat in the brooder must be just right. Too much heat is as bad for young chicks as not enough.--- Well, Taylor?

TAYLOR: The heat in the brooder should be kept at about 95 degrees, shouldn't it, Professor?

THE PROFESSOR: In most cases --- that would be about right -- when the chicks are first put in. But, of course, it's impractical to say for each type of brooder -- at what temperature you should keep it. That'll depend on the position of the thermometer, the style of the hover, the age of the chicks, and weather conditions. I'd let the chicks be my thermometer --

TAYLOR: What do you mean, "Let the chicks be the thermometer?"

THE PROFESSOR: Aim to keep them comfortable.

TAYLOR: How are you going to tell when they're comfortable?

THE PROFESSOR: If they're comfortable, they'll spread out -- just under the edge of the hover. Some of their heads will be sticking out from under the hover cloth. If the next morning, the droppings are well scattered under the hover, it's a sign the chicks have had heat enough.

If chicks get too cold, they crowd together -- and try to get nearer the heat. They should settle down in an even ring around the outer edge of the hover. If they crowd to one side, put them around evenly. If they insist on crowding to one side, look for the trouble. It's often a strong draught or a direct light.

Too much heat is also to be avoided. If they pant and gasp and sit around with their mouths open, it's not hard to see that they're uncomfortable ---

TAYLOR: You'd lower the heat as the weather gets warmer --- and as the chicks start to feather out -- wouldn't you?

THE PROFESSOR: Yes, certainly. As the chicks grow larger, you can supply the heat only at night. Later, you can cut it down to just the cold nights. But always be careful to prevent chilling -- or overheating. That not only weakens them -- but it may result in bowel trouble ----

TAYLOR: When would you cut off the heat altogether?

THE PROFESSOR: After they are well feathered.

When the chicks are fairly well feathered, you can put low roosts -- in the rear of the brooder house ---

TAYLOR: Is that necessary, Professor?

THE PROFESSOR: Yes. You should furnish them low roosts. They'll soon learn to roost. That'll prevent crowding on the floor.

All of you poultry raisers should bear in mind that chicks grow fast. Often they don't get enough ventilation -- if you let them sit on the floor when they are a few weeks old ---

ROGERS: In some brooders the chicks don't have the same chance to adjust themselves to the heat -- that other brooders provide -- do they?

THE PROFESSOR: No, they're not all equal in that respect.

ROGERS: In brooders like that, you can gradually reduce the temperature to about 85 degrees for the second 10 days. Then you can lower down to 70 or 75 degrees as long as the chickens need heat ---

Of course that will depend on the season and the number of chicks. You can readily see 350 chicks will give off more heat than a smaller number -- so you have to regulate your lamp or stove accordingly ---- (As if interrupted) Well?

TAYLOR: What do you feed the chicks during that time?

THE PROFESSOR: Well we have to close now --- but we'll take up the problem of feeding baby chicks next week.

# # # # # #

UNITED STATES DEPARTMENT OF AGRICULTURE
Radio Service
OFFICE OF INFORMATION

PROGRAM..... RELEASE.....

U. S. RADIO FARM SCHOOL. SECOND Wed., Mar. 30.

NOT FOR PUBLICATION

SHORT COURSE: Spring Problems in Poultry Management.

LECTURE NO. 2. Removing the Males from the Breeding Flock.

ANNOUNCEMENT: The second class of the Poultry Farm School for this evening is about to start. Last week, you know, the Professor talked about feeding the layers. Now he's going to discuss the eggs. But if you've missed out on any of the classes or didn't get down some of the points that have already been handled in the Farm School, you can get printed booklets covering this material by writing to this station for them.

(The characters speaking during this lecture are: The Professor himself, and Kenney and Drew, members of the class.)

********

THE PROFESSOR: Let's have a little quiet! You men, there in the back of the room -----We are ready to start the class -----

Kenney!

KENNEY: Yes, sir.

THE PROFESSOR: What determines the price of any commodity?

KENNEY: What ---Well, eh! -- a lot of things -- I dunno, Professor.

THE PROFESSOR: Did you ever stop to think -- that it's largely a matter of quality ------- Take eggs, for instance. Why are egg prices so low in the summer?

KENNEY: I thought that was a question of supply and demand.

THE PROFESSOR: Well, of course, that does have a direct bearing -- but it's also well to keep in mind -- that low prices of summer eggs -- are often caused by their very inferior quality ----

What's responsible for that poor quality, Kenney?

KENNEY: Eggs just don't keep well in warm weather.

THE PROFESSOR: Why don't they keep well? ------ All right, Drew, Suppose you tell him -- why eggs produced in summer are not up to the quality of eggs produced in early spring -- when the weather is cooler?

DREW: Well, egg shells are porous. In hot weather, the water in the egg tends to evaporate through the pores in the shell ---

THE PROFESSOR: Yes. That's undoubtedly one reason why summer eggs are not up to the quality of cooler weather eggs --- But that's not the main reason ---

Was that you raising your hand, Kenney? -- You think you know now do you? All right, go ahead.

KENNEY: Well, on most farms there are lots of hens that go broody in the spring ---

THE PROFESSOR: Yes ---

KENNEY: And they are allowed to sit on newly laid eggs ---

THE PROFESSOR: Now you're getting warmer, Kenney --- Well?

KENNEY: Well when hens sit on fertile eggs for as short a time as 12 hours, the germ begins to develop -----

THE PROFESSOR: Eggs - actly. And not only that, but just keeping fertile eggs in an air temperature of 90 or 95 degrees will start the germ to developing. And there are many chicken houses where the temperature easily reaches 90 degrees during the summer months.

I want you all to remember this. One of the principal causes of the poor quality of eggs marketed is the production of fertile eggs during the summer months -----

How would you remedy the situation? - How would you avoid that loss, Kenney?

KENNEY: I'd gather the eggs often.

THE PROFESSOR: Yes, you should certainly do that. Eggs that are laid in hidden nests --- and eggs that are not collected often -- are spoiled before they are gathered ------ But many farmers don't hesitate to market them. Such eggs, of course, tend to keep down consumption --- to reduce the demand. They tend to lower the price of all other eggs on the market. They should be gathered often --- but that's not the key to the trouble. (As if interrupted) Well?

DREW: Professor, why not produce infertile eggs!

THE PROFESSOR: That's eggs-actly what you should do. Why, I dare say, there are a number of you, right here in this class, that let the roosters run with the hens most of the summer. As a result, you produce large numbers of fertile eggs -- eggs that spoil quickly.

You can do more to improve the quality of eggs - during the summer months -- by removing the male birds from the flock, than in any other way. (As if interrupted) What is it?

DREW: That would make the eggs better for preserving for home use, as well as for market, wouldn't it?

THE PROFESSOR: Certainly. Eggs to be stored should be from hens that have no males running with them. Of course, fertile eggs which are strictly fresh will keep satisfactory. But an infertile keeps longer, even without the preservative, than a fertile egg. Eggs for preserving should be perfectly fresh. They should also be clean.

But remember a fertile egg will start to incubate easily. A fertile egg at ordinary room temperature will spoil quickly, while an infertile egg will merely lose a little moisture by evaporation.

KENNEY: Professor, you said that fertile eggs are one of the principal causes of poor quality in market eggs ---

THE PROFESSOR: Unquestionably ---

KENNEY: What are the other causes?

DREW: How would you judge an egg for quality, Professor?

THE PROFESSOR: One at a time, please. One at a time. ------

KENNEY: Don't feeds affect the eggs? ------

THE PROFESSOR: I'm not going to answer another question at this time. I want you to do a little thinking for yourselves. Now at our next meeting we'll take up the question of how to judge eggs for quality -----

DREW: Would you market eggs with blood spots in them?

THE PROFESSOR: That's another question we'll take up next week.

Any of the rest of you who have questions about the quality of eggs, just wait until next class. I want each one of you to be prepared to recite. I may not call on all of you, but I'm likely to call on any of you. In the meantime, please don't forget that its most important to remove

the males from the laying flock. If you are not already doing that, it's time you started.

Bad eggs have robbed the poultryman of part of his profits long enough.

###